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Letters

Appreciates A.PH.A. Service

Sirs:

I would just like to say a few words about my feelings toward the AMERICAN PHARMACEUTICAL ASSOCIATION. The ASSOCIATION has done a wonderful service for me while I have been in the Air Force. Through the JOURNALS I have been able to overcome one of my handicaps—that is, not having been able to finish my last year in school. By reading the JOURNALS I have been able to keep up with all new items which have been placed on the market. This summer I am returning to school and I am sure that the A.PH.A. will continue to be of very great service to me.

There is only one question I would like to ask. Is it at all possible that the Surgeons General of the three services will initiate a Pharmacy Corps or do away with the present OJT (on the job training) program for pharmacists?

St. Louis, Mo. THOMAS W. BRANSON

Detail Men Should Be Pharmacists

Sirs:

I have intended to write this letter for quite some time but have put it off for various reasons. This week, however, I received a bill for the annual dues and an accompanying letter describing special problems which would be under consideration at the forthcoming annual convention. I believe the problem outlined in this letter is particularly applicable under the first paragraph concerned with the distribution of drugs without professional control.

Although I am a pharmacist I am at present working as a detail man for one of the smaller pharmaceutical companies. In the course of my employment I meet many other detail men who are not pharmacists, some who have no academic background for such work.

All of these detail men are generously supplied with samples of *Prescription Only* drugs by their employers. There is, however, no reason why these detail men cannot give out samples to friends, office secretaries, and others without a physician's prescription. I have seen this happen many times. The pharmacist, however, is rigidly controlled by law on the distribution of these products and at times is faced with the problem of refilling a necessary prescription and taking a chance on being brought to task by Federal authorities.

I think, therefore, that the manufacturer should be under the same regulations as the retail pharmacist in the distribution of drugs. In other words, detail men should be registered pharmacists. This is not intended to throw a lot of people out of work but in the future I think that pharmacy laws should be written to exclude other than registered pharmacists from this branch of drug distribution.

Foxboro, Mass. "A DETAIL MAN"

Sterandryl—Brand Name

Sirs:

In THIS JOURNAL, **16,** 8(Jan., 1955), you state, "Sterandryl is testosterone propionate. . ."

Sterandryl is a testosterone propionate specialty marketed by Les Laboratoires Roussel, Paris, France, and is not a common synonym, as is indicated in your note.

New York, N.Y. HOBART C. JETER

Manual Necessary

Sirs:

Would you be so kind as to forward to me a copy of your *Manual of Antibiotics.* The subject is becoming so complex that an authoritative reference is quite necessary. . . .

My regards to all who remember that I once visited Washington [during the A.PH.A. Centennial]. If Dr. Goldstein is still with you I think he would be pleased to know that the calamine lotion with carboxymethylcellulose was a success and is being used by us as a standard preparation for dispensing.

Dunedin SW 2, New Zealand CHARLES BELL

Likes *Collector's Corner*

Sirs:

I just finished reading *Collector's Corner* in the January PRACTICAL PHARMACY EDITION. These articles are always interesting, and even more so to amateur collectors like myself. The history of pharmacy through the years has always fascinated me but, financially speaking, the fascination has been held in check somewhat. This time the bargain is too great, so please send me a copy of the Lititz Pharmacopeia as reproduced by the A.PH.A.

Columbus, Ohio ROBERT K. BENNETT

FDA Criminal Actions

Twelve drug products were seized in the past month by FDA. Seven were alleged to be misleadingly labeled as cures for a variety of disease conditions. Other violations charged were low potency, inadequate warnings, marketing without an effective new-drug application, unwarranted use of prescription labeling, and contamination by insects.

Over-the-Counter Sales

Los Angeles, Calif.—Refilled prescriptions for amphetamine without physicians' authorizations. One defendant acquitted by jury, the other fined $200 and given a 3-day jail sentence.

East St. Louis, Ill.—Sold amphetamine, hormones, sulfonamides, and penicillin without physicians' prescriptions. Fined $400 and court costs.

East St. Louis, Ill.—Sold amphetamine, barbiturates, hormones, and sulfonamides without physicians' prescriptions. Fined $400 and court costs.

Salem, Ill.—Sold amphetamine, sulfonamides, and thyroid without physicians' prescriptions. Fined a total of $400.

St. Paul, Minn.—Sold amphetamine and barbiturates without physicians' prescriptions. Fined $500, given a 2-year suspended jail sentence, and placed on probation for 5 years.

New Rochelle, N.Y.—Refilled prescriptions for barbiturates and sulfonamides without physicians' authorizations. Fined $750 and placed on probation for 6 months.

Harrisburg, Pa.—Sold apiol and ergot, hormones, sulfonamides, and thyroid without physicians' prescriptions. Fined $600, $100 of which was suspended, and placed on probation for 1 year.

Greeneville, Tenn.—Sold amphetamine, Banthine, and Butazolidin without physicians' prescriptions. Fined $600.

Providence, R.I.—Sold and refilled prescriptions for barbiturates and apiol-ergot without physicians' authorizations. Fined $400 each.

Spokane, Wash.—Sold amphetamine, barbiturates, penicillin, and Ergoapiol without physicians' prescriptions. Proprietor fined $300, employee, $10.

Misbranded Items

Miami, Fla.—Amphetamine sulfate failed to bear label statements required by law. Sentencing deferred pending probation officer's report.

New York, N.Y.—"P.B.S.C." contained penicillin and was not certified as required; one lot of "Cohen-Luks Anti-Bacterial Root Canal Cement" did not contain Aureomycin as represented, and another lot contained Aureomycin and was not certified as required; both drugs failed to bear label statements required by law. Firm fined $100; individual given an 18-month suspended jail sentence and placed on probation for six months.

Waukesha, Wis.—Dr. David Roberts veterinary remedies misbranded in accompanying labeling with false and misleading claims that the drugs would be adequate and effective in the treatment of faulty kidney action in all animals; breeding troubles of cows, mares, and sows; overworked cows; eye diseases, fistulas, mastitis, eczema, mange, lump jaw, and warts of cattle; colds, catarrhal fever, foot rot, and lung worms in sheep; sleeping sickness in horses; for removing bots from horses; that the drugs would stimulate breeding in cows, mares, and sows; that they were an adequate and effective preventive against bloat in cattle; and that they would aid digestion, promote vigor, and keep cows and sheep profitable. Found guilty in November 1954, but sentencing was deferred pending probation officer's report. On February 7 the firm was fined $1,500 and the individual $200.

Montdale, Pa.—Concentrated broth, whole wheat, peppermint tea leaves, wheat germ, wheat hearts, wheat germ oil, and herb laxative failed to bear adequate directions for use in treatment of, among other things, diabetes, epilepsy, pin worms and tapeworms, arthritis, gallstones, impaired eyesight and hearing, excess weight, tuberculosis, multiple sclerosis, fits and convulsions, and change of life in men and women; and that they would provide vigor and buoyant health, prevent mental instability and bad temper, and "put off death to the very last minute," for which the products were promoted in "health lectures." Sentencing deferred pending appeal and probation officer's report.

Injunction

Truth or Consequences, N. Mex.—Prohibited from shipping "EE—Sterilizer" device containing false and misleading therapeutic claims in accompanying literature that the device is an adequate and effective treatment for bacterial, ear, virus, sinus, tooth, and hand infections, prostate conditions, poliomyelitis, infected tonsils, cold, influenza, dysentery, venereal diseases, pimples, sores, asthma, and all other infections of the body.

"Pump Trouble" Heart Cartoon Film

"Pump Trouble," an animated cartoon film about a worried little man who thought he had heart disease, had its New York City premiere this month under the auspices of the American Heart Association. The film points up that only a physician can determine whether a person has heart disease and that many notions are mere myths. Some examples:

Nothing can be done about heart disease and one certainly can't work with it. *The fact is that some forms of heart disease can be cured; others can be prevented, and almost all heart disease patients can be greatly helped by medical care.*

Chest pains, palpitations, and particularly pain over the left chest, are sure signs of heart disease. *Actually, localized pain in the left chest rarely means heart disease.*

Heart attacks are usually sudden and fatal. *The truth of the matter is that there are usually warning signs and symptoms preceding heart attacks. Most people recover from heart attacks sufficiently to lead productive lives.*

Correction

Wyamine Sulfate was listed in a tabulation of drugs used for hypertension in an article, "Hypertension—A Review for Pharmacists," in THIS JOURNAL, **16,** 88(Feb., 1955). This drug is used in the treatment of *hypotensive* states and should not have been included in the table.

Washington Views

All health legislation so far introduced for consideration by the 84th Congress will be subject to hearings before the House Interstate and Foreign Commerce Committee and the special Senate Subcommittee of the Committee on Labor and Welfare. Hearings on various bills have begun and will be under way for some time.

Chester R. Davis, senior vice president and director of the Chicago Title and Trust Company, was sworn in last month as assistant secretary of the Army.

Governors of the 48 states and territories will meet in Washington, May 2 and 3 for briefings by top federal officials on international and national problems.

Dr. Clifton K. Himmelsbach has been appointed Chief, Division of Hospitals, U.S. Public Health Service.

Direct commissions in the WAC as second lieutenants are available to college women graduates aged 21-27 who have the mental, physical and character qualifications. College graduates aged 28-33 who have the same qualifications plus career experience in a civilian field may receive direct commissions as first lieutenants.

Incoming Army Surgeon General Silas Hays has declared himself, informally, in favor of having either as the Chief of the Medical Service Corps or the Chief of the Pharmacy, Supply and Administration Section a career man with a pharmacy background. Appointments to both positions are due any time now.

There is a better than even chance that a pharmacist colonel now serving in the Medical Service Corps of the Army will succeed non-pharmacist Colonel Robert Black, who has just retired as Chief of the Corps.

Antitrust-minded Senators have raised eyebrows at the similarity in the market prices quoted in advance by six manufacturers of the Salk polio vaccine. What these Senators fail to recall is that penicillin, cortisone and other new drugs had generally uniform price schedules, just as other new commodities are apt to, but when the supply became adequate or when the demand picture took definite form, price competition became—and remains—very keen, dictated as it is by the facts of supply and demand. The evidence on this score is plentiful.

The Surgeons General of the Army, Navy, Air Force, Public Health Service, and the Medical Director of the Veterans Administration have all named high-ranking pharmacists as fraternal delegates to the A.PH.A. House of Delegates which meets at Miami Beach on May 3, 4, and 6.

All signs point to an exhaustive Senate Committee investigation of the narcotic drug problem. Removal of the UN narcotic control offices from New York to Geneva and the U.S. Bureau of

Narcotics from the Treasury Department to the Department of Justice will come under careful scrutiny. Factual rather than emotional appeals to prevent the proposed changes will have to be made in order to swing the Senate to favor the status quo, especially with regard to the UN transfer proposal.

Award of forty-eight unclassified life science research contracts in the fields of biology, medicine, biophysics and radiation instrumentation has been announced by the U.S. Atomic Energy Commission. The contracts were awarded to universities and private institutions as a part of the AEC's continuing policy of assisting and fostering research and development in fields related to atomic energy.

The Office of Vocational Rehabilitation of the Department of Health, Education, and Welfare has approved a $50,000 grant in partial support of a research and demonstration project to rehabilitate sufferers from chronic intractable asthma who are unable to work. The project is one of 11 approved on recommendation of the newly established National Advisory Council on Vocational Rehabilitation. The total Federal support for the first year of the projects is $215,250.

Criticism of certain activities of the Food and Drug Administration voiced by the Commission on Organization of the Executive Branch of the Government (Hoover Commission) and its Task Force will probably be met to some extent by the exhaustive reports which the FDA is providing the Committee To Evaluate the Adequacy of the Enforcement of the Federal Food and Drug Laws, named by Secretary Oveta Culp Hobby of the Department of Health, Education, and Welfare. The latter committee is being carefully briefed on the alleged inadequacy of Congressional appropriations for enforcement procedures. Pharmacy and the drug industry are represented on the committee by Robert A. Hardt of Hoffmann-La Roche Inc., Walter Silbersack of American Home Products Company, and Dean Charles F. Poe of the College of Pharmacy, University of Colorado.

Speculation on the date of appearance of U.S.P. XV and N.F. X continues, but the best information is that these books will not be available before July 1 and probably closer to August 1. It is not likely that the standards in these revised official compendia will become effective much before January 1, 1956, so as to allow for necessary changes in labeling.

The Committee on the Status of Pharmacists in Government Service, with representation from A.PH.A., N.A.R.D., A.A.C.P., and N.A.B.P., met in Washington on April 4 with Surgeon General Armstrong of the Army and Deputy Surgeon General Bradley of the Navy to review Medical Service Corps affairs in each branch of the service. Chairman Arthur Einbeck will report fully on the matters discussed to the constituent organizations in the near future.

The Committee on Public Relations of the AMERICAN PHARMACEUTICAL ASSOCIATION, meeting in Washington April 12, has set the week of October 2, 1955, for the observance of National Pharmacy Week.

℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C. Inquiries should include all pertinent details.

Eutectic Mixtures in Capsules

Where can I get information on techniques for compounding the following prescription?—K. Z., Massachusetts.

Phenyl salicylate	*gr. iii*
Camphor	*gr. i*
Acetylsalicylic acid	*gr. ii*
Citrated caffeine	*gr. i*

M. ft. capsulae numero sedecim

An article on "Stabilization of Capsules of Eutectic Mixtures Against Liquefaction," by I. J. Bellafiore, was published in THIS JOURNAL, **14,** 580(Sept., 1953). The author of the article presents the case for absorption of fully formed eutectic mixtures. The method of mixing the eutectic ingredients separately with an inert powder is preferred by W. J. Husa and C. H. Becker, whose article appeared in THIS JOURNAL, **29,** 79 (1940).

Hydrocortisone Suspension, Sterile

Can sterile suspensions of hydrocortisone (alcohol) and hydrocortisone acetate be prepared using heat?—M. R., Madrid, Spain.

Hydrocortisone and hydrocortisone acetate generally behave similarly in pharmaceutical preparations. Both of these compounds are not sufficiently stable at temperatures required for dry sterilization of solids; therefore, aqueous suspensions containing hydrocortisone or the acetate are preferably sterilized at lower temperatures in the presence of a bacteriostatic agent or agents. Satisfactory bacteriostatic agents are phenol, mercury antiseptics, and benzyl alcohol for parenteral products; quaternary compounds and esters of *p*-hydroxybenzoic acid for ophthalmic preparations. It is advisable to sterilize the vehicle separately, either by autoclaving or filtration depending upon its composition. In addition to containing the preservative, aqueous vehicles are buffered to about *p*H 6 and usually are made isotonic. A surfactant such as Tween 80 aids in suspending the insoluble medicinals. Suspending agents are sometimes useful, particularly if the suspension settles rapidly. Hydrocortisone has been sterilized by heat while suspended in a portion of the aqueous vehicle containing all or most of the bacteriostatic agent at temperatures not exceeding 100° C. The concentrated suspension sterilized in this manner can then be diluted to the proper concentration with a previously sterilized vehicle.

Physostigmine Salicylate Solution 1%

Please send us a formula for a stable ophthalmic solution of physostigmine salicylate 1%.—B. Y., Maryland.

The following formula is recommended by K. L. Ward [*Hospital Pharmacist* (Canada), **8,** 17 (1955)]:

Physostigmine salicylate 1%	(NaCl equiv. 0.19%)
Sodium sulfite, anhyd. 0.1%	(NaCl equiv. 0.58%)
McIlvaine's buffer ¼ strength, *q.s.*	(NaCl equiv. 0.94%)

Preserved water containing methylparaben 0.26 Gm. and propylparaben 0.14 Gm. per liter is used to make the buffer (*p*H 5) containing: 0.025 *M* citric acid solution 97 ml. and 0.05 *M* Na_2HPO_4 solution 103 ml. It is claimed that the compounded solution is stable and the slight hypertonicity does not cause irritation.

The formula recommended by H. W. Hind, *et al.*, *J.A.Ph.A., Sci. Ed.*, **36,** 413(1947), utilizing boric acid buffer (*p*H 5) and phenylmercuric nitrate 1:100,000 as preservative, was discussed in THIS JOURNAL, **14,** 540(Sept., 1953).

Gentian Violet Aqueous Solution

Can you supply information on the stability of gentian violet aqueous solution 2%?—S. K., New Jersey.

Probably the simplest answer would be that the solubility and stability of aqueous solutions of gentian violet depend upon the composition of the material dissolved. Gentian violet, methyl violet, crystal violet, and methylrosaniline chloride are names in N.F. IX for "hexamethylpararosaniline chloride, usually admixed with pentamethylpara-

rosaniline chloride and tetramethylpararosaniline chloride." The definition proposed for the monograph in U.S.P. XV retains the N.F. IX statement and adds: "It contains not less than 96 per cent of methylrosaniline chloride. . . ." The N.F. IX monograph indicates that 1 Gm. dissolves in 30 cc. to 40 cc. of water; the U.S.P. XV will indicate only that "Methylrosaniline chloride is soluble in water."

A recent study by Tura *et al.*, (see p. 237) indicates that samples of the drug available in the Boston area (Merck and National Aniline) showed solubilities from 1 in 11 to 1 in 16 at 25° C. when shaken with water for ten minutes.

Crystal violet of the British Pharmacopoeia 1953 is stated to be soluble 1 in 200 of water at 20° C. The editor of *Pharm. J.*, **172,** 250(Mar. 27, 1954) states: "The commonly recommended strength for an aqueous solution is 1 per cent and this cannot be prepared with crystal violet, B.P.C., unless some alcohol is added."

Since the composition and solubility of gentian violet are not exactly predictable, no definite period of stability for the 2% aqueous solution can be stated.

Anti-tuberculosis Vaccine

Can you supply further information on the product cited as "An anti-tuberculosis vaccine from powdered dead germs and double drug combination for eradicating the germs from the body?"—J. B., England.

The cited reference might be misleading. The original item referred to an anti-tuberculosis vaccine from powdered dead germs and a combination of isoniazid and pyrazinamide. Apparently the three are not in combination in the vaccine. The dead-germ powder vaccine was made by Drs. David W. Weiss and Rene J. Dubos of the Rockefeller Institute for Medical Research, New York. It was made by killing tuberculosis germs with phenol, dehydrating them, and then grinding them into a powder. Tested on mice, the vaccine was found to give as good protection against tuberculosis as BCG vaccine, but the immunity from the powdered dead-germ vaccine would not last as long. The vaccine is still in the experimental stage and has not been tried on humans. The report was published in *Science News Letter*, 340(May 29, 1954).

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Progress in Medicine

Overtreatment Dermatitis

Effects of certain pharmaceuticals on skin, after prolonged use, are discussed in a report to the A.M.A. Council on Pharmacy and Chemistry by Dr. L. Edward Gaul [*J.A.M.A.*, **157,** 720(Feb. 26, 1955)]. Dr. Gaul states: "The commonest and most frequently overtreated of dermatoses seen in practice is contact dermatitis.... Current dermatological proprietary drugs have induced so much overtreatment that they should be contraindicated in contact dermatitis. Cutaneous infections are the second commonest dermatoses overtreated. These diseases for the most part receive only a clinical diagnosis, and on this basis they have been treated topically with the mercurials, sulfonamides, and antibiotics.... The art of medicine—time for diagnosis, time for development of immunity, time for repair and healing processes to proceed uninterruptedly—has been temporarily lost in the broad spectrum of the wonder drugs."

Synergistic Drug Combinations

A study based upon *in vitro* antibacterial actions of drugs in different growth media lead I. Davis and M. G. Sevag [*Antibiotics & Chemotherapy*, **5,** 80(Feb., 1955)] to propose that in order to merit the classification of "synergistic," drug combinations should possess the following characteristics: (1) The concentrations of at least one, and preferably both members of the combination, must be substantially less than the completely inhibitory concentration of either drug used alone. (2) Under no circumstances should either exceed its inhibitory concentration. (3) If a bacterial population resistant to the drug combination is produced, it must not appear within a short incubation period.

Chloramphenicol in Trachoma

Trachoma in its first stage is cured with chloramphenicol (Chloromycetin) ointment 1%, applied five times daily, according to Dr. S. P. Gupta (*Rev. Internat. Trachome*, **31,** 182, 1954; through *Trop. Dis. Bull.*, **51,** 837, 1954). Relapse follows untimely interruption of medication. Chronic trachoma is variably affected by drug therapy alone (topical and systemic) and usually requires surgical treatment. K. Mikuni and A. Tsuchiya obtained 80.5 per cent cure rate with chloramphenicol ointment 1% in the treatment of trachoma by daily application with a glass rod after rinsing the eyes with 1% saline solution (*Acta Medica et Biolog.*, Japan, **2,** 461, 1954; through *Antibiotic Med.*, **1,** 108, 1955). All primary trachoma (III) patients were cured in eleven weeks; trachoma I cases showed 92 per cent cures in twenty weeks; and in trachoma II, 50 per cent were cured in twenty weeks.

Cortisone, ACTH, Aspirin in Rheumatic Fever

A report of a 61-week period of observation in 497 rheumatic fever patients under 16 years of age by investigators in the U.S., United Kingdom, and Canada was released by the American Heart Association, March 9, 1955. There was no evidence that the use of cortisone, ACTH, or aspirin in groups of 167, 162, and 168 patients, respectively, resulted in uniform termination of rheumatic fever. Hormone treatment appears to control symptoms more promptly than does aspirin but there is a greater tendency for the symptoms to reappear for a limited time at the end of hormone treatment. Toxic effects were more frequent with hormone treatment than with aspirin.

Atabrine in Petit Mal

Atabrine (quinacrine) in doses of 100 mg. twice daily for one week, then 100 mg. daily for several weeks, helped to control petit mal seizures for several weeks after treatment stopped, according to Dr. M. T. Moore in *J. Albert Einstein Med. Center*, **3,** 12(1954).

Hyperthyroidism Test with Triiodothyronine and Radioactive Iodine

The basis for a new and simple test for hyperthyroidism is administration of I_{131} in a dose of 15 μc. and measuring the twenty-four hours uptake by the thyroid (using a Geiger tube), and then noting the effect of doses of 75–150 mcg. of triiodothyronine daily by mouth for eight days on the daily uptake of I_{131}. In 48 euthyroid patients without thyroid disease, the uptake decreased so that no value exceeded 20 per cent, while in patients with toxic goiter no value under 35 per cent of the control amount of I_{131} was obtained after administration of triiodothyronine. Triiodothyronine was valuable in establishing the activity of the eye complications of Graves'

disease. Patients with nontoxic diffuse goiter responded like normal subjects to the triiodothyronine, whereas five of 21 patients with nontoxic nodular goiter showed no response even though the initial uptake values were within the normal range. Radioautographs of three of the five glands revealed the nodules to be functionally active.

[Werner, S. W., and Spooner, M., *Bull. N.Y. Acad. Med.*, **31,** 137(Feb., 1955).]

Chloromycetin-Gantrisin Therapy

Treatment of 39 urinary infections due to *B proteus* with Chloromycetin and Gantrisin caused disappearance of the microorganism in 33 patients, report Drs. C. D. Creevy and W. E. Price, *J. Urol.*, **72,** 1233(1954). The patients received 0.5 Gm. of Chloromycetin and 2 Gm. of Gantrisin orally four times daily during the first week; then 0.25 Gm. and 1 Gm., respectively, during the second week; and during the third week the dosage was 0.25 Gm. twice daily and 0.5 Gm. four times daily of the respective drugs.

Hot or Cold Applications for Inflammation and Pain

A study on 60 patients, ages 19 to 71 years, who had extensive dental surgery indicated little difference in pain, tenderness, or general discomfort after twenty-four hours of application of either ice bags or heat from infrared lamps to different groups. No differences were noted on the rate of healing. After the first day, the majority of patients who had received cold applications indicated they would prefer ensuing treatments to be heat applications. All patients were given penicillin, warm salt mouthwashes, and sedatives as postoperative procedures.

[Possoff, A., *J. Am. Dent. Assoc.*, **50,** 147 (Feb., 1955).]

Allergic Sensitization to Topical Therapeutic Agents

The index of sensitivity—the incidence of existing allergic eczematous contact-type hypersensitivity to a series of topical therapeutic agents—was determined in 743 selected dermatologic patients. Patch tests indicated: No existing allergic hypersensitivity to benzoic acid, benzyl benzoate, and ichthammol. Allergic hypersensitivity in less than 2 per cent of patients to boric acid, aluminum acetate, menthol naphthalan, petrolatum, and phenol. Allergic hypersensitivity in 2–5 per cent of patients to oxycholesterol–petrolatum ointment, hydrous wool fat, dibucaine, resorcinol, salicylic acid, and iodochlorhydroxyquin. Allergic hypersensitivity in more than 5 per cent of patients to ammoniated mercury, ethyl aminobenzoate, red mercuric sulfide, crude coal tar, coal tar solution, juniper tar, tetracaine, ointment containing cetyl alcohol-coal tar distillate + near-colloidal sulfur + salicylic acid, chlorhydroxyquinoline compound ointment, and benzoic and salicylic acid ointment N.F.

[Baer, R. L., Serri, F., and Weissenbach-Vial, C., *A.M.A. Arch. Dermatol.*, **71,** 19(Jan., 1955).]

Effect of Chemotherapy and Antibiotics on Pathologic Picture of Infection

Incidental problems regarding pathologic patterns of infection should not overshadow the overall accomplishments of chemotherapeutic and antibiotic agents, concludes Paul R. Cannon. Antibiotic resistance of microbic strains, superinfection, and drug reactions should be balanced against the facts of declining death rates and decreasing morbidity. Noting the clinical and chemical ingenuity displayed in solving many of the problems relating to the toxic reactions of sulfonamide therapy, Cannon sees cause for optimism with respect to the similar problems of drug reactions due to the antibiotics, as increasing attention is paid to such procedures as skin testing, oral administration, antihistamines, better bacteriological controls, and changing focuses of use. The man-made diseases will presumably be with us as long as new compounds are provided for clinical use.

[Cannon, P. R., *Bull. N.Y. Acad. Med.*, **31,** 87(Feb., 1955).]

Water for Injection U.S.P. and Isotonic Sodium Chloride Solution U.S.P.

The multiple-dose container problem relating to water for injection U.S.P. and isotonic sodium chloride solution U.S.P. has been considered by the A.M.A. Council on Pharmacy and Chemistry at the request of the Committee on Revision of the U.S.P. The Council's report in *J.A.M.A.*, **156,** 1582(1954) states: "The Council concludes that water for injection and isotonic sodium chloride solution without an adequate bacteriostatic preservative, in containers holding more than 30 cc. and under ordinary conditions of use for multiple doses, may eventually contain clinically important quantities of pyrogenic substances, toxic substances, or pathogenic bacteria. The Council also believes that the larger containers of water for injection and isotonic sodium chloride solution should be marketed as a single dose without preservative."

National Defense *and* Security

A nationwide civil defense exercise during which the Federal government will relocate its essential wartime functions will be held June 15, 16 and 17. The test, "Operation Alert 1955," will be based on a hypothetical nuclear attack on 50 of 92 critical target cities of the continental United States, with additional attacks on cities in Alaska, Puerto Rico, Hawaii, and Panama.

☆ ☆ ☆

In the largest peacetime field training exercises in the National Guard's 300-year history, an estimated 360,000 officers and men in more than 5,000 federally recognized Army National Guard units will take part in two weeks of intensive field training this summer and fall. The training will be conducted by National Guard personnel assisted by active Army advisers on regular duty with Guard units.

☆ ☆ ☆

Some 2,700 radio stations are expected to use a series of nine 30-second spot announcements designed to impress listeners with the CONELRAD frequencies, 640 and 1240, on their radio dials.

CONELRAD, taken from the words "*Con*trol of *El*ectromagnetic *Rad*iation," is the only type of radio broadcasting which can be used with safety during the approach of hostile planes. Regular broadcasts on varied frequencies would enable enemy navigators to follow the radio beams to specific cities.

☆ ☆ ☆

"Cebar," like "Conelrad," is a word you'll be hearing more and more. Of Army origin, it is used in connection with weapons and refers to those using chemical, biological, and radiological elements.

☆ ☆ ☆

The Army Chemical Corps has designed a $2 atomic age gas mask for civilians and a "do-it-yourself" kit to build a simple decontaminated air room at home.

☆ ☆ ☆

Soldier-volunteers from the Second Army area will help test newly developed or modified Chemical Corps equipment and techniques for protection against chemical warfare agents starting this month at the Army Chemical Center, Edgewood, Md. The tests will be of a classified nature and are designed to provide information which would reduce the chances of injury to military personnel in the event of attack with toxic agents. The program will also include tests in the new climatic chamber at the Center to determine the effect of various weather conditions.

☆ ☆ ☆

Water distribution systems of the nation can offer attractive targets for biological warfare attack, but the U.S. Public Health Service and the Federal Civil Defense Administration report that at present "chlorination, in spite of certain shortcomings, remains the best single protective practice" provided that it is properly administered to extend throughout the entire distribution system.

☆ ☆ ☆

The Army and the Air Force, because of prospective oversupplies of new second lieutenants from the ROTC in June, have been granted permission to call these newly commissioned officers to active duty at intervals during a period of two years. Efforts will be made to adjust the timing of the active duty calls to the desires of the officers involved.

☆ ☆ ☆

An artificial eye, operated by magnets causing the eye to move and even twinkle as effectively as the living eye it matches, has been developed at the Veterans Administration hospital in Boston, Massachusetts. The "magnetic eye," as it has been called by its designers, already has been implanted into more than 150 New England veterans whose eyes have suffered injury or disease.

☆ ☆ ☆

Inauguration of a series of training courses for physicians and other professional health personnel who would be called to duty in the event of enemy action or other national emergency has been announced by the U.S. Public Health Service. Each trainee is a member of the Commissioned Reserve Corps of the PHS and will attend the training course as part of the Service's recently announced emergency program to expand its Commissioned Reserve by 5,000 new officers by July 1, 1956.

Hospital Pharmacy

In the Bulletin of the A.S.H.P.

The current issue of *The Bulletin of the American Society of Hospital Pharmacists* (March–April) includes an article on the *International Pharmacopoeia* by Dr. E. Fullerton Cook, formerly a member of the International Commission of Pharmacopoeial Experts and Chairman of the Committee on Revision of the *U.S.P.* Dr. Cook covers the development of the *I.P.* and its role in world health, giving particular attention to the need for cooperation on the part of pharmacists in the United States.

Another article, "The Use of Antithyroid Drugs and Radioactive Iodine," offers pharmacists a concise review of drugs currently used to treat disorders of the thyroid. Of particular interest is the discussion of radioactive iodine along with case studies and results of treatment by this method. The paper was presented by Dr. J. G. Rodarte of Scott and White Clinic, Temple, Tex., at the Seventh Annual Hospital Pharmacy Seminar, Austin, Tex., February 19 and 20.

The January–February issue of *The Bulletin* carried the Second Supplement to the *Comprehensive Bibliography on Hospital Pharmacy.* This list of nearly 800 references appearing during the past two years covers the literature in this specialty. Classified according to subject and indexed by author, the *Bibliography* is easy to use and offers the student and practitioner in hospital pharmacy a guide to the current literature available.

Of interest to retail pharmacists is the article entitled "Retail Pharmacist Serves Small Hospital," also appearing in the January–February issue. The author, Mr. Frank E. Kunkel, is a retail pharmacist in Cincinnati, Ohio. He relates his experiences in providing pharmaceutical services in a small hospital and coordinating this with the activities in his retail store. He emphasizes the advantages of such an arrangement, pointing out the need for providing a total service and the necessity for the pharmacist spending some time at the hospital each day.

A.S.H.P. Accepts New Chapters

Five new chapters have been accepted as affiliates of the American Society of Hospital Pharmacists, making a total of 43 state and local groups working closely with the national organizations. The new chapters are—Southeast Florida Society of Hospital Pharmacists, Iowa Society of Hospital Pharmacists, Rhode Island Society of Hospital Pharmacists, The Society of Hospital Pharmacists of the State of Oregon, and Minnesota Society of Hospital Pharmacists.

Although some of these groups have been organized for several years, only recently have the necessary requirements for affiliation been submitted for approval by the Society's Executive Committee. In fulfilling the requirements as outlined in the A.S.H.P. Constitution and By-Laws, the affiliate is given representation in the Society's House of Delegates and a voice in hospital pharmacy.

Hospitals Accredited by Joint Commission

According to a recent bulletin from the Joint Commission on Accreditation of Hospitals 3,513 hospitals in the U.S. were listed as fully or provisionally accredited as of December 31, 1954. The report, made by Dr. Kenneth Babcock, Commission director, shows 2,928 hospitals fully accredited with 585 hospitals holding provisional accreditation.

It is also pointed out that the qualification for accreditation which stipulated that a hospital must be registered with the American Medical Association has been revised since the A.M.A. discontinued its hospital registry. The Commission now requires that U.S. hospitals must be listed in the *Administrator's Guide* issue of *Hospitals*, the journal of the American Hospital Association, instead.

Letourneau Heads Northwestern Program

Dr. Charles U. Letourneau has been appointed by the Board of Trustees of Northwestern University as director of the Program in Hospital Administration and associate professor of Hospital Administration. The announcement was made by Dr. Malcom T. MacEachern, founder and present director of the program, and Professor Richard Donham, dean of the School of Commerce of which the Program is a division. Dr. MacEachern will continue his association with the Program as professor of Hospital Administration with the title of honorary director.

Dr. Letourneau as secretary of the Council on Professional Practice of the American Hospital Association has worked with the A.PH.A. and A.S.H.P. in developing the programs for the annual institutes on hospital pharmacy.

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Wide interest in control of narcotic drugs has been aroused following disclosure of certain international developments suggesting political use of drugs. They hold serious implications for possible future regulation of these drugs for medicinal use. The following review of the situation is of special value for pharmacists at this time.

New Problems in the Control of Narcotic Drugs

When President Eisenhower reserved a part of his message on the State of the Union to announce appointment of a Cabinet committee to study illicit traffic in narcotic drugs, he focused public attention on the increasingly difficult problems of control of legitimate use and distribution of such drugs.

Public reaction to mention of narcotics is always one of horror. Lurid press reports on the effects of addiction and the sordid aspects of drug traffic incite feelings of revulsion. Today, there is strong incentive to remove these evil influences on the morals, health and welfare of the public and to police strictly all movement of these drugs at international, national and local levels.

Proper and Improper Use

Recent discussions of the narcotic drug problem in Congress and its committees and in the professions have highlighted the long-standing difficulty of distinguishing between beneficent and socially detrimental use of narcotics. Properly employed, certain narcotics are indispensable to the practice of modern medicine.

On the other hand, opium derivatives have been used by the unscrupulous here and abroad to develop illegal income, and to subject the health, stamina and resistance of people to domination by those who seek to acquire the possessions and territory of the unsuspecting. In the United States, "dope rings", many with international connections, exist to profit at the expense of juveniles and weaker elements of the population.

Senate Interest

A most timely luncheon conference was called on March 28, by Senator Alexander Wiley of Wisconsin, a ranking Republican member of the Judiciary Committee, to explore some of the national and international phases of the narcotics problem. The Senator declared that, in view of the current importance of the narcotic menace, he considered it helpful to have an exchange of views among those most familiar with the problem: Narcotics Commissioner Harry Anslinger of the Treasury Department, Senators sponsoring legislation to tighten controls, representatives of America's medical and pharmaceutical professions and members of the drug industry.

The conferees agreed to a continued, determined drive against addiction on a sound, planned basis. There is need for accurate, down-to-earth factual analysis of the existing situation.

Points Stressed

The Narcotics Commissioner underscored the the importance of stopping narcotics at foreign sources rather than trying to intercept drugs at ports or control them in the States. Stiff penalties, he felt, could dry up illicit traffic. But the regulations should be carefully drawn, so that the professional trafficker gets the full brunt

Participants at the Luncheon Conference on Narcotics

Seated: *Commissioner Harry Anslinger; Senators Alexander Wiley, Price Daniel, Herman Welker; Dr. Frank Berry; Senators Henry Dworshak and Edward Martin.*

Standing: *George Frates; George Cunningham; Drs. Theodore Klumpp, J. O'Neil Closs, R. P. Fischelis, and Karl Bambach; Frank Kuehl; John Worley; Senator James Murray; Julius N. Cahn.*

of the laws, while technical violators can be handled in a firm but understanding way.

The Commissioner stressed that the postwar upsurge in addiction could in no way be traced to the medical or the pharmaceutical professions. Both he and Dr. Theodore Klumpp, now serving as chairman of the Hoover Commission's Medical Task Force, noted the splendid cooperation between the Narcotics Bureau and the professions. The Bureau now has only 250 agents, in contrast to two local municipal squads numbering 200 in New York and 80 in Los Angeles. Expansion must be considered.

Dr. Frank Berry, assistant defense secretary, stated that addiction among U. S. troops in the Far East was lower than in 1953 and believed it would fall further. On the question of a proposed transfer of the UN. Narcotics Division from New York to Geneva, it was agreed that "there is tremendous value in keeping the UN. narcotics work centered in the United States where the fullest force of world public opinion can be mobilized against any offender nations, such as Red China."

The majority present spoke up against another proposed transfer—that of the Narcotics Bureau out of the Treasury Department. It was noted that a transfer might endanger the legality of the present narcotics laws which are mainly based on tax statutes and would disturb the good relations between the Bureau and the professions. [The A.Ph.A. Council recently recorded opposition to S.J.R. 19 which seeks to move the Bureau to the Justice Department.]

Final agreement was expressed on the indispensable need for narcotics in medical practice. Legitimate narcotics play an essential role in emergencies and in other medical and scientific use. Most of the illegitimate traffic is confined to heroin, an opium derivative which has been literally outlawed in the United States and every other country, with but five unfortunate exceptions.

The conference closed with notice that the President's Cabinet committee is now formulating proposals for future action. Senator Price Daniel of Texas, who chaired the conference discussions, invited participants to work with his subcommittee of the Judiciary Committee in forthcoming hearings on the narcotics laws.

Participants

Others Senators present at the conference were Welker, Idaho; O'Mahoney, Wyo.; Mansfield, Mont.; Sparkman, Ala.; Murray, Mont.; Kuchel, Calif.; Hickenlooper, Iowa; Dworshak, Idaho; Martin, Pa.; Kefauver, Tenn.; Green, R.I.; Williams, Del.; Hayden, Ariz.; and Humphrey, Minn.

Representing medicine and pharmacy were Frank Kuehl, general counsel, A.M.A.; Dr. Theodore G. Klumpp; George H. Frates, N.A.R.D. Washington representative; Dr. J. O'Neil Closs, executive vice president, A.P.M.A.; Dr. Karl Bambach, executive vice president and secretary, A.D.M.A.; Dr. John Worley, general counsel, A.D.M.A., and Dr. Robert P. Fischelis, secretary and general manager, A.PH.A.

Also present were Dr. Frank Berry, assistant secretary of defense; George Cunningham, assistant to Commissioner Anslinger; Merton Henry, legislative assistant to Senator Frederick Payne, Me., and Julius M. Cahn, counsel of the Senate Committee on Foreign Relations.

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STRAIGHT FROM HEADQUARTERS

ROBERT P. FISCHELIS, EDITOR

Polio Problems for the Pharmacist

TELEVISION, radio and the newspapers have covered in great detail the evaluation procedure and announcement of the findings regarding the Salk vaccine. The public therefore knows that the vaccine works; that it is safe, effective and potent.

All of the detail as to the origin and value of the Salk vaccine, the inoculation procedure to be followed in providing immunity, and information as to distribution have been covered quite thoroughly in the metropolitan press and, as Dr. Alan Gregg put it in his discussion at the announcement ceremony at the University of Michigan, "The workers on nearly every phase of infantile paralysis are now out of the foothills where the vistas were few and the trail far from clear." Dr. Gregg further remarked that, "With this first considerable success in prevention on a large scale, the sense of climbing, of accomplishment, and of exhilaration becomes stronger than it ever was before.

"It is also certain," Dr. Gregg continued, "that we are now to be faced as a people with a desperate test: Can we resist the temptation to bootleg, cheat and quarrel for a vaccine that is in short supply, to use every strategem for selfish advantage? Will a scientific victory be followed by a moral defeat: are we good enough to receive such a boon? The challenge is certain. The answer is not. It lies with us all."

As this is being written the telegraph wires and the telephone are conveying innumerable questions as to supply, dating, distribution procedures, costs, remuneration for administration and various other services.

Professional societies and their publications are at something of a disadvantage with respect to modern methods of communication and so it appears to the public that the professions may be somewhat slow in arriving at definite ways and means of making certain that some system of equitable distribution of the widely publicized vaccine is being worked out.

From a practical standpoint it is, of course, necessary when any commodity is scarce to work out a system of distribution based on supply and demand.

The factors that enter into the supply and demand of an immunizing agent such as the Salk vaccine are quite different from those which can be dealt with in connection with a commodity that does not involve possible survival for numbers of people.

Furthermore it is quite certain that as experience is gained with the use of the vaccine there will be suggested modifications in techniques and other procedures. Already there has been one major modification suggested by Dr. Salk and adopted by the National Foundation for Infantile Paralysis, namely the spacing of the injections. Originally it was thought that three injections at intervals of approximately two weeks would be of greatest service. Now this has been reduced to two injections at short intervals with the third injection withheld for approximately 7 months. This has certain implications insofar as packaging is concerned, but at the same time it makes available for immediate use, one-third of the total supply for a great many children who would otherwise have had to await increased production. The Foundation has announced that it will relinquish its immediate claim to the amount of vaccine ordered for the third injection so that this amount may become available for commercial distribution; but not until the Foundation's order for vaccine to complete the first two injections has been filled completely.

Announcements in some locations indicate a disposition for pharmacists to forego any remuneration for handling vaccine in the period during which it is in short supply. Others feel that regardless of the shortage the question of supply should follow the customary pattern of distribution with allocations handled more or less on the basis of knowledge of the extent to which individ-

ual practitioners of medicine have been supplying immunization against other diseases.

In the midst of speculation as to whether adequate protection for the maximum number of those most susceptible to poliomyelitis can be provided without resort to any form of allocation or regimentation of the supply, the President of the United States has indicated that there should be a discussion of the question of equitable distribution by the health professions and the drug industry and a meeting for this purpose has been called by the secretary of the Department of Health, Education and Welfare.

The AMERICAN PHARMACEUTICAL ASSOCIATION will be represented at this conference on April 22 and it can be counted upon to join with other professional groups in working out necessary solutions in accordance with the principles of ethics of American medicine and American pharmacy and in keeping with the established physician–pharmacist–patient relationship under the American system of free enterprise.

The problem and the function of the pharmacist in connection with this newly created weapon against a dreaded disease is not only one of joining in making the immunizing agent available. It includes also allaying the fears and tendency toward hysteria of the people of his community. It is just as important to assist in making all members of a community aware of the needs of others as it is to serve the few who may be well informed.

The Miami Beach Convention

THIS issue of the JOURNAL will reach most of our members just prior to the Miami Beach Convention. From the program of the various sessions and the titles of the many papers to be presented, it is quite clear that there will be intensive discussions of interest to every member who attends these meetings regardless of what his field of pharmaceutical practice may be.

The change in the time of holding the Annual Convention has made the period between annual meetings seem even shorter than it really is. However, there is one significant factor involved in the change. Instead of following practically all of the annual meetings of state conventions, this 1955 meeting of the A.PH.A. will precede most of the state conventions. It will therefore be possible for state pharmaceutical associations to have before them the conclusions reached by the House of Delegates of the A.PH.A. on many current problems, which can only be solved adequately by action at the state level.

The resolutions of the Miami Beach Convention will become available shortly after the meeting, and they can be used as guides to action on important matters when most state associations gather in June, July, and August to consider what to do about pharmacy's pressing problems in their own areas.

Medical Clinics Association Urges Changes in A.M.A. Code

THE American Association of Medical Clinics at its fifth annual session, Nov. 13, 1954, approved the report of its Pharmacy Committee recommending liberalization of the A.M.A. Code of Ethics which condemns ownership of pharmacies and dispensing of drugs by physicians.

The Committee noted that the development of group practice medical clinics in the past 30 years has been accompanied by erection of buildings housing both clinic facilities and pharmacies for mutual convenience. According to the Committee, the experience so far indicates that pharmacists working in clinic pharmacies have not complained of being exploited.

It is recognized that Section 8 of the Code of Ethics was designed to prohibit physician control over filling of prescriptions and restrictions on the choice of a pharmacy by the patient. The Committee report therefore suggested rewording the Code to strike at these abuses by making it unethical to write a numbered prescription which could be filled in only one pharmacy or to suggest patronizing one pharmacy over others.

The report commented on the traditional opposition of the pharmacy profession to ownership of pharmacies by one or more physicians on the ground that they, as colleagues, do not wish to be subordinate to physicians. Physicians, declared the Committee, like pharmacists, sometimes work for others. So long as involuntary servitude is not involved, any statement on work relationship would be contrary to practice and law in this country. It was noted that there is no prohibition against employment of one

pharmacist by another or by a hospital or a chain drugstore.

The public interest aspect of the matter was also reviewed, concluding there was no evidence that clinic pharmacies filled prescriptions unethically, charged higher prices or required preference. There are reasons, the report concluded, for believing that many patients find the convenience, cost and service at least as satisfactory as service provided elsewhere.

The Pharmacy Committee was under the chairmanship of Dr. Arthur Kintner, Western Montana Clinic, Missoula, Mont. Other members include Dr. Luther Holmgren, Jackson Clinic, Madison, Wis. and Dr. C. H. Bayha, Toledo Clinic.

It remains to be seen what the American Medical Association will do with the request of the Medical Clinics Association if and when it is presented.

Pharmacy College for Korea

Announcement of a project to strengthen and expand pharmacy education at Chung Ang University in South Korea was made at a White House luncheon on April 5 by Elmer Bobst, chairman of the Board of Warner-Hudnut, Inc., who presented the American-Korean Foundation with a check for $100,000 for this project, on behalf of the Gustavus and Louise Pfeiffer Research Foundation. The late Mr. Pfeiffer was formerly the chairman of the Board of Warner-Hudnut and was honorary president of the AMERICAN PHARMACEUTICAL ASSOCIATION in 1948.

The announcement highlighted an informal report on voluntary health and medical activities in the Republic of Korea presented to President Dwight D. Eisenhower by the American-Korean Foundation.

Mr. Bobst announced that a special AKF pharmacy advisory committee, with Dr. Robert P. Fischelis, secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION, as chairman has been appointed to direct the project for the American-Korean Foundation; and Dr. Charles O. Lee, faculty member of the Ohio Northern University College of Pharmacy, Ada, Ohio, is now in Korea for two months to begin detailed planning for the project. A former faculty member at Purdue University, Dr. Lee some years ago was a pharmacy missionary in China. Other members of the Committee include Elmer Bobst, Dr. Troy C. Daniels, and Matthew G. Herold.

The American-Korean Foundation is dedicated to the task of helping the South Koreans to help themselves through a rehabilitation program calculated to promote the welfare of the people of Korea and the cultural, economic and social relationships between the Republic of Korea and the United States.

Fair Trade Enabling Acts Under Fire

THE Attorney General's National Committee to Study the Antitrust Laws, composed of 60 lawyers and economists, made its long awaited report on March 31 and confirmed the worst fears of the proponents of "fair trade." In recommending repeal of the Miller-Tydings and McGuire Acts, the committee condemned the Federal statutory exemption of "fair trade" pricing as an unwarranted compromise of the basic tenets of national antitrust policy and charged that fair trade was in violation of the "due process" clause of the Fourteenth Amendment.

Representatives of small business were quick to reply to the report with the statement that the committee would promote monopoly at the expense of small business and that if the committee had made a study of consumer prices it would have found that the cost of living is not affected by the presence or absence of "fair trade" in any state. Others replied that "fair trade" is a justifiable form of price support not unlike the protection given farmers in the form of parity prices and the protection given to laborers through legislation providing for minimum wages.

Friends of "fair trade" saw new hope in the unanimous decision of the Supreme Court of the United States in the case of Williamson vs. Lee Optical Company which was handed down on March 28. Although this case did not deal with "fair trade," it did bring out an interpretation of the "due process" clause and the powers of legislative bodies which many felt was directly opposed to the action taken by several high state courts in declaring their "fair trade" laws unconstitutional.

Solubilizing Agents for Syrups

By Wm. B. Swafford and W. Lewis Nobles

Tween 20 emerges as solubilizer of choice for certain syrups. Authors Swafford (University of Tennessee School of Pharmacy instructor) and Nobles (associate professor at the University of Mississippi School of Pharmacy) show how to eliminate difficulty and time loss in preparing tolu balsam, orange, and aromatic eriodictyon syrups.

SYRUPS ARE GENERALLY regarded as being sweetened aqueous solutions of flavoring and/or medicated substances. As a class, official syrups do not present exceptional preparative difficulties. A common problem in producing certain syrups, however, is the difficulty encountered and time consumed in solubilizing some of the active ingredients. These inconveniences arise to a greater or lesser degree in the preparation of: tolu balsam, orange, and aromatic eriodictyon syrups.

What effect would the addition of certain solubilizing agents have on easing preparation of these official syrups? This idea was not new. It had been applied previously to various foods, cosmetic and pharmaceutical formulations (1–6). Tween 20[a] (polyoxyethylene sorbitan monolaurate), a nonionic surface-active agent, was found to be the agent of choice after preliminary tests which included Tweens 65 and 80.

Tolu Balsam Syrup

A control sample of this syrup was prepared according to the U.S.P. XIV monograph. In addition to the time involved in filtration, considerable time is required to obtain an intimate mixture of the tincture of tolu, magnesium carbonate and sucrose, and then to mix this properly with the necessary water. Some difficulty is generally encountered at the latter stage by the beginning student, since clumping will be induced by too rapid addition of water.

The proposed modification involves: (a) elimination of the magnesium carbonate, (b) use of Tween 20 as a solubilizing agent, (c) addition of glycerin and (d) use of a quantity of simple syrup as the vehicle. The suggested formula is:

Tolu balsam tincture	2.5
Tween 20	15.0
Glycerin	15.0
Syrup *q.s. ad*	50.0

Procedure—Mix the tincture with Tween 20; add glycerin, and mix thoroughly; add to the requisite amount of simple syrup.

The resulting product is clear but slightly darker than the official syrup. A rather extraordinary occurrence was observed when this syrup was allowed to stand. It separated into two layers both of which were transparent. The upper layer was dark, the lower was water-white. On shaking, a clear, apparently homogeneous, solution resulted. On standing, the two layers reappeared and again could be dispersed by shaking.

To test the compatibility of the modified tolu syrup, a number of typical prescriptions were compounded, using both the modification and the official syrup.

℞ *No. 1*

Ipecac syrup	℥ss
Chloroform	gtts x
Tolu syrup, *q.s. ad*	℥iii

℞ *No. 2*

Ammonium chloride	℥ii
Sodium citrate	℥iii
Tolu syrup	℥i
Distilled water, *q.s. ad*	℥iv

℞ *No. 3*

Ammonium salicylate	gr. xlviii
Sodium citrate	℥ii
Tolu syrup	
Distilled water, *aa q.s.*	℥iii

℞ *No. 4*

Aspirin	℥iss
Cascara fluidextract	
Glycyrrhiza fluidextract	*aa* ℥iss
Tolu syrup, *q.s. ad*	℥iv

[a] Supplied through the courtesy of Atlas Powder Company, Wilmington, Del.

These prescriptions were examined periodically over a period of ten days. No incompatibilities were experienced with prescriptions No. 1 and No. 2, using either the modified or official syrup. The modified formula resulted in a slightly cloudy preparation when used in prescription No. 3, whereas the official syrup produced a clear solution. The slight cloudiness should not be too objectionable from a dispensing standpoint, however. Neither of the syrups gave a completely satisfactory preparation in prescription No. 4 since the aspirin was not soluble in either vehicle.

Orange Syrup

A control sample of this syrup was prepared according to the official monograph, involving use of sweet orange peel tincture. Gerstenzang (7) called attention to the high cost and inconvenience of preparing this tincture by the official process on a large scale. Since the official tincture of sweet orange peel is essentially an alcoholic solution of the volatile oil and coloring principle obtained from the outer rind of the fresh fruit, it appeared that the equivalent concentration of orange oil and necessary color might be used as a satisfactory substitute. It was found that a one per cent concentration of oil and the natural, slightly yellow color of the sorbitan derivative employed were satisfactory. The following formula is suggested:

Orange oil	0.5
Tween 20	3.0
Citric acid	0.25
Glycerin	5.0
Syrup, *q.s. ad*	50.0

Procedure—Mix the orange oil with Tween 20 and add glycerin. Dissolve the citric acid in the syrup. Add the orange oil mixture to this solution. A clear preparation results without the necessity of filtration.

This preparation compares very favorably in taste and appearance with the official syrup.

To compare the possible use of this syrup with the official one in extemporaneous compound, several typical prescriptions were filled using both of the syrups:

℞ *No. 1*

Hyoscyamus tincture	ʒiii
Compound squill syrup	ʒiii
Orange syrup	ʒi
Lactated pepsin elixir *q.s. ad*	ʒiv

℞ *No. 2*

Aspirin	ʒi
Orange syrup	
Distilled water	āā ʒiss

℞ *No. 3*

Iron and ammonium citrate solution	ʒii
Potassium arsenite solution	ʒss
Orange syrup	ʒi
Distilled water, *q.s. ad*	ʒiv

No appreciable difference was noted after ten days in the appearance of the above prescriptions using the official or modified syrup.

Aromatic Eriodictyon Syrup

As in the previous two cases, a control sample was prepared according to the official monograph. The method requires that the mixture stand overnight and then be filtered. One liter of the official syrup required approximately three hours for the necessary filtration. Fantus (8), Crossen and Goldner (9), and Lee (10) point out that the resinous constituents of the fluidextract are rendered soluble by the potassium hydroxide solution and the magnesium carbonate employed. The suggested formula would eliminate both these alkaline materials since Tween 20 served admirably to solubilize the resinous principles of the fluidextracts. The modified formula is:

Eriodictyon fluidextract	1.6
Compound cardamon tincture	3.25
Sassafras oil	0.025
Lemon oil	0.025
Clove oil	0.05
Tween 20	15.00
Syrup, *q.s. ad*	50.00

Procedure—Mix the fluidextract, tincture, and volatile oils; add Tween 20; agitate vigorously and add enough syrup to bring the solution to the required volume. A clear solution results.

Thus the periods of standing and time-consuming filtration are eliminated and a product which compares favorably with the official syrup results.

The following prescriptions were filled with both the official and modified formulas:

℞ *No. 1*

Quinine ethyl carbonate	5.0
Aromatic eriodictyon syrup, *q.s. ad*	60.0

℞ *No. 2*

Strychnine sulfate	0.015
Aromatic yerba santa syrup, *q.s. ad*	120.00

℞ *No. 3*

Potassium iodide	ʒiii
Yerba santa syrup, *q.s. ad*	ʒiv

After 10 days there was no significant difference in the appearance of the above prescriptions using

either the modified or official syrup. Both syrups served markedly to increase the palatability of the above medicaments.

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(8) Fantus, B., *ibid.*, **22**, 323(1933).
(9) Crossen, G. E., and Goldner, K. J., "Pharmaceutical Preparations," Lea and Febiger, Philadelphia, 1952, p. 21.
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AACP Teachers' Seminar

The seventh annual Teachers' Seminar of the American Association of Colleges of Pharmacy will be held at Butler University College of Pharmacy, Indianapolis, the week of August 8–12 inclusive. These seminars are sponsored by the American Foundation for Pharmaceutical Education. This year the area to be stressed will be the teaching of pharmacy. The committee in charge of the seminar program is Dean K. L. Kaufman, Butler University, chairman; Professor Edward J. Rowe, Butler University; Dean Joseph Sprowls, Temple University; Dr. R. A. Deno, University of Michigan; and Dean Louis C. Zopf, State University of Iowa. Details of the program will be announced later.

VA Training Program for Pharmacists

Pharmacists interested in taking part in a Veterans Administration residency training program should file their applications with VA before May 10 in order to be considered for training beginning with the 1955 fall semester.

The program—a combination of graduate school study and practical experience in a VA hospital—will be held at the VA Center in Los Angeles, Cal., for the third consecutive year, and at the VA hospital in Houston, Tex., for the first time.

At least two years are required to complete the residency program. About half the time will be spent on duty in VA hospitals and the remainder in graduate work at the university participating in the program. A degree of Master of Science in Pharmacy, with a major in hospital pharmacy, will be awarded by the university upon satisfactory completion of work.

Pharmacists accepted for the residency program will receive $2.02 an hour while working at the VA Center or hospital for 28 hours a week during the course. Quarters and subsistence will be available at the hospitals for a nominal charge. Residents must pay tuition and other academic charges at the university.

Pharmacists interested in applying should file a Form 57 (application form), available at any First or Second Class Post Office, with the Executive Secretary, Central Board of U.S. Civil Service Examiners, Veterans Administration, Washington 25, D.C., before the May 10 deadline.

The Tuberculosis Problem

In a note on the closing of the Trudeau Sanatorium, we learn that in 1904 the national death rate from tuberculosis averaged 200 per 100,000 population and in 1954, about 12 per 100,000 (*Am. Rev. Tuberc. and Pul. Dis.*, **71**, 163, Feb., 1955). Undoubtedly the development and use of chemotherapeutic agents such as streptomycin, isoniazid, and *p*-aminosalicylic acid, have played an important part in making the tuberculosis patient an ambulatory rather than a hospitalized individual and have helped in the reduction of mortality figures.

Concurrently with this brighter picture of the tuberculosis situation, an editorial in *J.A.M.A.*, **157**, 512, Feb. 5, 1955, states there is good reason to believe that the total number of tuberculosis cases, particularly in large cities, is increasing. It is held that ambulatory, clinically well but bacteriologically positive patients who would have died in earlier years now constitute a new menace that requires continuous supervision in order to control the threat to public health.

More rapid healing for tubercular patients is a direct result of chemotherapy. In addition, prolonged chemotherapy causes definite changes in cases of pulmonary tuberculosis, according to Dr. Oscar Auerbach (*Am. Rev. Tuberculosis and Pul. Dis.*, **71**, 165, Feb., 1955). He believes that, depending on the lag between onset of infection and initiation of chemotherapy and on duration of therapy, the following changes accompany rapid clearing of the perifocal reaction by specific drugs: (*a*) capsules around necrotic foci are thinner, (*b*) cavity walls become thinner, as does the pleura overlying these cavities, (*c*) there is decrease in pulmonary fibrosis and emphysema, (*d*) there is decrease in the number of aneurysms in the cavity and incidence of pulmonary hemorrhages.

New Gums for Pharmaceutical Jellies

By Hastings H. Hutchins and Robert E. Singiser

From the Research Laboratories of Merck's Chemical Division comes a review of varied uses for ten natural and synthetic gums in easily prepared jellies. Incorporating the recently developed gums with six common medicinals, the jellies are designed to aid in their use as such or as bases for other pharmaceuticals.

PROPER selection of gums is important to overcome some incompatibilities of jellies and prevent dispensing difficulties, or simply to improve the pharmaceutical elegance of the compounded prescription.

The following classification served as a basis for selection of gums used in this study:

Natural Vegetable Gums

Exudates—Tragacanth, Karaya
Seeds—Locust Bean, Guar
Seaweeds—Kelgin, Kraystay

Synthetic Gums

Methylcellulose and sodium carboxymethylcellulose (CMC)

Natural Mineral Clays

Veegum and Thix

In evaluating the pharmaceutical usefulness of these gums, careful consideration was given to selecting the type of additive to be incorporated. An attempt was made to include substances in acceptable concentrations representing several kinds of medicinal agents. Accordingly substances used were the antiseptics thimerosal (0.1%) and gentian violet (1%), and the alkaloidal salt ephedrine sulfate (1%), all of which are used in official jellies; pyrilamine maleate (1.5%), a strong hydrotrope and antihistaminic; lactic acid (1%), an acidic substance; and triethanolamine (1%), an alkaline substance often incorporated in jelly formulations.

Unless otherwise noted, the following general formula and method of preparation was employed for the jellies: Five per cent of the gum was wetted with 10% (w/w) glycerin and thoroughly mixed. The distilled water, containing 0.15% methyl *p*-hydroxybenzoate and 0.02% propyl *p*-hydroxybenzoate, was then added with constant stirring until a gel formed. No lump formation was observed as long as stirring was constant and sufficiently rapid. Preservatives were added to the jellies since they were all found to be subject to bacterial attack. Various physical properties of the jellies alone are given in Table I.

Jellies containing medicinal agents were prepared in a similar manner. Medicinal agents were incorporated by dissolving them in the water before addition to the gums.

Samples of the test jellies were placed in 2-ounce clear-glass jars and stored in the dark at room temperature and at 40° C. Observations made at various intervals during periods of storage up to three months are given in Tables II and III.

Tragacanth Gum

Tragacanth is one of the earliest known gums and has been official in the U.S.P. in every edition since 1820. Until introduction of a soluble form, the preparation of gels was a time-consuming operation. "Aqualized" Tragacanth[a] requires only the addition of water at 25° C. followed by several minutes of stirring to form the gel.

Substitution of propylene glycol for glycerin as the wetting agent and humectant in the tragacanth jelly of Table I produced a much tougher and less elastic gel.

Karaya Gum

Gum Karaya[b] is a natural water-soluble gum possessing an extremely fast rate of gelation. In certain types of formulations this very rapid gel formation could be a disadvantage. During the preparation of the 1.5% pyrilamine maleate jelly (Table II) there appeared to be an incompatibility. Upon continued mixing, however, a satis-

[a] Product of Soluble Products Co., Brooklyn, N.Y.
[b] Product of Morningstar, Nicol & Co., New York, N.Y.

Table I—Pharmaceutical Properties of the Jellies

Jelly	Concentration of Gum, %	Color of Jelly	*p*H of 5% Solution of Jelly	Viscosity	Spreadability	Drying Properties	Tackiness	Film-Forming Properties
Aqualized Tragacanth Gum	5	Buff-white	5.40	+++	+++	No	Marked	Yes
Karaya gum	5	Medium brown	4.80	+++	+++	No	Yes	Yes
Aqualized Locust Bean Gum	5	Off-white, opaque	5.84	+++	+++	No	Marked	Yes
Jaguar Gum	2	White, translucent	6.30	++++	+++	No	Yes	Yes
Kelgin LV	7	Light amber	6.85	+++	++	No	Very marked	Yes
Kraystay T	4	Light tan	7.00	+++	+++	No	Slight	Yes
Methocel-400	3	Clear, colorless	8.20	+++	+ to ++	No	Yes	Yes
Sodium CMC-70 M.V.	5	Clear, colorless	7.00	+++	++	No	Marked	Yes
Veegum HV	9	Buff-white	9.60	++++	++++	Yes	No	Yes
Thix	6	Light cream	8.08	++++	++++	Yes	No	Yes

+ = poor ++ = fair +++ = satisfactory ++++ = excellent.

Table II—Effect of Medicinal Agents on Stability of Jellies Stored at Room Temperature for 3 Months

	1% Triethanolamine	0.1% Thimerosal	1% Ephedrine Sulfate	1% Lactic Acid	1.5% Pyrilamine Maleate	1% Gentian Violet	Control
Aqualized Tragacanth Gum	Liquefied, moldy	N.C.	N.C.	N.C.	N.C.	N.C.	Slightly thinner
Karaya Gum	N.C.	Thinner	N.C.	N.C.	N.C.–had a white color	Liquefied	N.C.
Aqualized Locust Bean Gum	Liquefied, moldy	N.C.	Liquefied	N.C.	N.C.	N.C.	N.C.
Jaguar Gum	Liquefied, yellow	N.C.	Liquefied, moldy	Liquefied, moldy	Liquefied, moldy	N.C.	N.C.
Kelgin LV	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.
Kraystay T	N.C.	N.C.	N.C.	Slightly thinner	N.C.	N.C.	N.C.
Methocel-400	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.
Sodium CMC-70 M.V.	Moldy	N.C.	N.C.	N.C.	N.C.	N.C.	N.C.
Veegum HV	N.C.	N.C.	Incompatible	N.C.	Incompatible	Dry, crumbly	N.C.
Thix	Moldy	N.C.	Incompatible	N.C.	Incompatible	Moldy	N.C.

Table III—Effect of Medicinal Agents on Stability of Jellies Stored at 40° C. for 3 Months

	1% Triethanolamine	0.1% Thimerosal	1% Ephedrine Sulfate	1% Lactic Acid	1.5% Pyrilamine Maleate	1% Gentian Violet	Control
Aqualized Tragacanth Gum	Liquefied, moldy	Thinner	N.C.	Very thin	N.C.	Slightly thinner	Thinner
Karaya Gum	Liquefied, moldy	Liquefied, darkened	Liquefied	Liquefied	Liquefied	Liquefied	Liquefied
Aqualized Locust Bean Gum	Liquefied, moldy	Thinner	Liquefied	Liquefied	N.C.	N.C.	Liquefied
Jaguar Gum	Liquefied, moldy, yellow	N.C.	Liquefied	Liquefied	Thinner	Very thin	N.C.
Kelgin LV	N.C.	N.C.	N.C.	Liquefied	Slightly thin	Slightly thin	N.C.
Kraystay T	N.C.	Liquefied	Liquefied	Liquefied	Liquefied	Thinner	Liquefied
Methocel-400	Bleeding	Bleeding, moldy	Bleeding	Bleeding	Bleeding	Bleeding	Bleeding
Sodium CMC-70 M.V.	Discolored	Thinner, discolored	Slightly discolored	N.C.	Discolored	Thinner	N.C.
Veegum HV	N.C.	N.C.	Incompatible	N.C.	Incompatible	Dry, crumbly	N.C.
Thix	Moldy	Moldy	Incompatible	Moldy	Incompatible	Moldy, dry	Moldy

N.C. = No apparent change.

factory jelly was obtained having a much lighter than normal color.

These jellies are quite susceptible to bacterial action and require an efficient preservative. During storage at 40° C., glycerin appeared to enhance the preservative action of the alkyl *p*-hydroxybenzoates. Samples containing preservatives prepared with and without glycerin showed no apparent differences during storage at room temperature.

Locust Bean Gum

"Aqualized" Locust Bean Gum[c] was used in this study since, like "Aqualized" Tragacanth Gum, it requires only the addition of water at 25° C. followed by several minutes of agitation to form a gel. Unlike tragacanth gum, it is not a true gum but the powdered seed of the locust tree found chiefly in the Mediterranean region.

Propylene glycol had no apparent advantage over glycerin in gelation or storage properties of the locust bean jelly described in Table I. Preservatives were required.

Jaguar Gum

Jaguar Gum[d] is a naturally occurring soluble gum which can be dispersed easily in cold water and gels readily. Desirable consistencies of Jaguar jelly are easily obtained according to the following formula: Jaguar 2.0%, glycerin 10%, methyl *p*-hydroxybenzoate 0.15%, propyl *p*-hydroxybenzoate 0.02% and distilled water 87.83%. If glycerin or propylene glycol is used it may either be added to the water before dispersing the gum or it may be used to wet the Jaguar before addition to the water, in which case the rate of gelation is retarded. The jellies are subject to bacterial decomposition and will liquefy in a short time unless preservatives are used. It may be noted that while mold growth was present in several of the samples recorded in Tables II and III, it was not present in the jelly base itself or in the samples containing thimerosal and gentian violet.

Kelgin

Sodium alginate, derived from giant Pacific kelp, is available under several trade names and in various viscosity ranges. For this study Kelgin LV[e] was selected. On prolonged storage the low viscosity type has less tendency to lose its gel strength than the higher viscosity forms. It also forms a less viscous jelly with smoother flow. Higher viscosity types of Kelgin have been satisfactorily substituted for Kelgin LV.

Kelgin gels are easily prepared with hot or cold water. The preservatives are first dissolved and Kelgin then sprinkled into the vigorously agitated solution. High speed stirring reduces the initial tendency to lump. If glycerin, propylene glycol or alcohol are present, they may be used to wet the Kelgin before adding it to the water. Initially these jellies have a light amber color which on prolonged storage turns brown. The addition of glycerin to the formula appears to inhibit discoloration. A suggested jelly formulation is: Kelgin LV 7.0%, glycerin 7.0%, methyl *p*-hydroxybenzoate 0.2%, calcium gluconate 0.05%, and distilled water 86.25%. The presence of calcium ions produces a much firmer gel by forming insoluble calcium alginate. The amount of calcium salt used may be varied to produce the desired viscosity. The above jelly has a very desirable consistency for use in nasal as well as topical preparations.

Kelgin jellies stored at 40° C. became somewhat fluid in a short time. When these gels were cooled to room temperature they returned to normal viscosity. Algin gels decrease in viscosity approximately 15% for each 10° F. rise in temperature (1).

Kraystay

Kraystay[f] is a chondrus derivative consisting essentially of carragheenin. It has the advantage over chondrus of easier gel preparation, acceptable uniformity, and freedom from foreign matter. Type T was selected as the most suitable for jelly formulations. Preservatives must be added to these jellies or bacterial decomposition quickly occurs.

Kraystay T jellies can be formulated easily with cold water; if hot water is used, a lesser percentage of Kraystay is required. Kraystay should be sprinkled into the water containing the preservatives. This mixture is agitated until the gum is uniformly dispersed. If glycerin, alcohol or propylene glycol is used to wet the gum, dispersion in water is more uniform. These jellies appear to lose some of their gel strength during storage up to 18 months. A typical formulation for a Kraystay jelly as described in Table I is: Kraystay T 4.0%, glycerin 2.0%, alkyl *p*-hydroxybenzoate 0.2%, distilled water 93.8%.

Kraystay gels, like Kelgin gels, decrease in viscosity at elevated temperatures at a rate of

[c] Product of Soluble Products Co., Brooklyn, N.Y.
[d] Guar gum supplied by Stein-Hall, 285 Madison Ave., New York 17, N.Y.
[e] Supplied by The Kelco Co., 31 Nassau St., New York 5, N.Y.
[f] Supplied by Phenix Food Co., 460 E. Illinois St., Chicago 90, Ill.

approximately 10% with each 10° F. rise in temperature (2).

Methylcellulose

Methocel,[g] a synthetic cellulose ether derivative, was included in this study since it yields a jelly which is quite inert and stable. A typical Methocel jelly is readily prepared by mixing 25% of the total water (90° C.) with 3% Methocel-400 and 15% glycerin and allowing it to stand for 30 minutes with only occasional stirring. The remainder of the water (10° C.), containing the preservatives, is then added with stirring until a uniform gel is obtained. A storage period of 1 to 2 hours at 10° C. produces a clear, colorless jelly. Although several methods of procedure are available, this method has produced the most satisfactory results.

The bleeding observed during storage at 40° C. (Table III) was probably caused by Methocel precipitation as a result of reduced solubility at elevated temperatures. Increasing the percentage of Methocel overcomes this difficulty at 40° C., but it also makes the jelly too viscous for practical use at room temperature.

Contrary to some reports (3), these studies indicate that Methocel jellies require a preservative; a 0.2% concentration of the alkyl *p*-hydroxybenzoates is quite satisfactory in most cases. Use of a humectant results in quicker wetting of the gum by water and increased adhesiveness, preservative action, and viscosity. The more common pharmaceutical surfactants (Tween, sodium lauryl sulfate, etc.) yield jellies possessing increased viscosity and better spreadability. Following these recommendations, jellies have been obtained which retained all of their initial physical properties after shelf storage periods of 12 to 18 months.

Sodium Carboxymethylcellulose

Sodium Carboxymethylcellulose Type 70 (medium viscosity)[h] was used in these studies since it appeared to offer the widest range of useful viscosities for topical preparations. A simple method of preparation, yielding a satisfactory jelly, is to wet 5% CMC (m.v.) with 15% glycerin (w/w) with stirring to form a slurry. The slurry is added to the hot distilled water (60–65° C.) containing 0.15% and 0.02% of methyl and propyl *p*-hydroxybenzoates respectively, with vigorous stirring until a gel forms.

The incorporation of surfactants into these jellies increases spreadability appreciably and also maintains clarity during a 20-month storage period. During this period, the jellies prepared with propylene glycol retained their original viscosity and remained perfectly clear, while those containing glycerin became slightly opaque and less viscous.

Veegum

Veegum,[i] an inorganic magnesium aluminum silicate, has the advantage of uniformity and freedom from foreign material. It forms gels which are not sticky or greasy. Veegum jellies form flexible, non-sheeting films. On drying, these films do not produce the uncomfortable "pull" on the skin characteristic of many organic jelly films. While Veegum in the dry form is not subject to bacterial decomposition (4), gels have been found to support bacterial growth unless preservatives are added. Veegum has the unusual ability to form reversible gels, that is, they are thixotropic. Vigorous shaking will liquefy the gel; it almost immediately reverts to a solid gel when shaking is discontinued.

Veegum jellies can be prepared using either cold or hot water. The use of heat produces more viscous jellies, thus allowing lower percentages of Veegum to be used. High speed stirring causes more rapid gelation but is not necessary to formulate desirable preparations. Faster rehydration can be effected if isopropanol, glycerin or propylene glycol are used in the formulation. Veegum is wetted before adding it to water. Reducing the particle size of the dry Veegum also increases the speed and uniformity of rehydration. If heat is used in the formation of the jelly, it is best to disperse the Veegum in cold water first and then heat the mixture with constant stirring until the Veegum rehydrates. Any lumps that may be present can easily be eliminated by trituration. If isopropanol or other volatile ingredients are included, Veegum should be wetted with them before addition of water. After allowing several minutes for partial rehydration, the mixture can be worked on a pill tile to assure uniformity and homogeneity. In all formulations the preservatives should be dissolved in the water prior to adding Veegum. An excellent formula for a jelly prepared without heat is: Veegum HV (micropulverized) 9.25%, isopropanol 9.0%, Tween 80 0.3%, methyl *p*-hydroxybenzoate 0.15%, propyl *p*-hydroxybenzoate 0.02%, distilled water 81.28%. The sodium salts of these preservatives may also be used; they are much more soluble and appear to be equally effective.

[g] Product of Dow Chemical Co., Midland, Mich.
[h] Product of Hercules Powder Co., Wilmington 99, Del.
[i] Product of R. T. Vanderbilt Co., 230 Park Avenue, New York 17, N.Y.

Glycerin or propylene glycol added to this formulation produces a tacky jelly which is non-drying. The incorporation of surfactants such as Tween 80 or Pluronic F-68 enhances spreadability.

A lotion formula has been suggested (5) consisting of 5 parts Veegum HV, 5 parts Carbowax 1500, and 115 parts water. It has been our observation that this preparation attains satisfactory jelly-like consistency after prolonged storage.

Gentian violet incorporated with the Veegum base (Table II) produces a heavy, paste-like jelly. Glycerin up to 25% and sodium carboxymethylcellulose (0.5 to 1.0%) combined with the Veegum formulations will produce a jelly base that can be used to incorporate larger percentages of insoluble active ingredients than is possible in the sample formulation. This combination will also eliminate the incompatibility with ephedrine sulfate noted in Tables II and III but it will not overcome pyrilamine maleate incompatibility.

Thix

Thix[1] (aluminum silicate) and Veegum (magnesium aluminum silicate) are similar inorganic gelling agents, both capable of forming thixotropic gels. The advantages of uniformity, freedom from stickiness, and desirable consistency found in Veegum jellies are also present in Thix jellies. Thix in the dry form is not subject to bacterial contamination (6) but jellies of it have been found to support mold growth in the absence of suitable preservatives.

Unlike Veegum, Thix cannot be gelled by simple incorporation in cold water. High-speed, high-shear stirring (such as by Waring Blendor) is necessary to form the gels. The preservative should be dissolved in the water and Thix dispersed in this solution. If glycerin or propylene glycol is added, it should be used to wet the Thix before dispersing it in the water. This mixture is then agitated in the Waring Blendor until gelation occurs. Roller mills or colloid mills also produce sufficient shear to gel Thix. A typical formula for a jelly is: Thix 6.0%, glycerin 15%, methyl *p*-hydroxybenzoate 0.15%, propyl *p*-hydroxybenzoate 0.02%, distilled water 78.83%. The sodium salts of the preservatives may be substituted satisfactorily for the alkyl *p*-hydroxybenzoates.

Gentian violet with Thix (Tables II and III) produces a heavy paste-like jelly similar to that obtained with Veegum.

[1] Product of National Lead Co., 111 Broadway, New York 6, N.Y.

Representative samples of all jelly bases described in this report were tested for irritation by application to both intact and abraded areas of rabbit skin. In this test the jelly was kept in contact with the skin for a period of 24 hours. Results showed that all samples were non-irritating. No test area showed even the slightest irritation during observations made 24, 48 and 72 hours after application (7).

Summary

Ten natural and synthetic gums were evaluated for use as jelly bases. Simplified methods of preparation for the various jellies are given. Observations of some physical properties such as color, viscosity, *p*H, spreadability, drying, and film-forming characteristics were noted. Six common medicinal agents were incorporated into each of the ten jelly bases. Their compatibility and storage stability at room temperature and 40° C. were studied.

Addition of glycerin or propylene glycol in the jellies decreased lump formation but retarded the rate of gelation. Glycerin yielded a more viscous preparation with a slower gel rate than propylene glycol. After short storage periods at room temperature and 40° C. propylene glycol shows better preservative and gel-retention properties than glycerin, especially in the locust bean, tragacanth, and karaya gum jellies. Glycerin and propylene glycol show no distinct advantage of one over the other in regard to wetting properties, thickening, degree of gelation, and as a humectant.

Preparations containing surfactants possessed superior wetting properties and better spreadability than jellies containing no such agents. Sodium lauryl sulfate appeared to be one of the less desirable surface active agents because it was found to cause considerable bubble formation during the preparation of the jelly. If rapid stirring is avoided this condition can be held to a minimum.

All of the jelly bases were found to be subject to microbial action. This condition can be effectively overcome by the use of alkyl *p*-hydroxybenzoates. Aside from their preservative properties, solutions of these alkyl *p*-hydroxybenzoates appeared to produce more viscous jellies with an increased rate of gelation.

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Simple Calculation for Specific Gravity of Solutions

By Isidore Greenberg, Leo Golub, and Lyman D. Fonda

A simple arithmetic method is presented for computing the specific gravity of a solution when concentrations and specific gravities of components are known. Compared with observed experimental determinations, this method is found to yield results generally within 5 per cent tolerance and is recommended as a practical procedure by the above faculty members of the Brooklyn College of Pharmacy.

IN PRACTICAL pharmaceutical operations it is frequently desirable to have the specific gravity of prepared solutions in which the concentrations of the components are known. These solutions may take the form of a solid in a liquid (w/w or w/v) or of a liquid in a liquid (v/v, w/v, or w/w). For some solutions it is possible to find the specific gravity by referring to tables, such as those found in the *United States Pharmacopeia*, for various concentrations of alcohol. The *Handbook of Chemistry and Physics* provides tables giving specific gravities of various concentrations of the more commonly used acids. By and large, however, the great variety of types and concentrations of solutions met with in pharmacy cannot be found in tables. Experimental determination of the specific gravity on the other hand, may not be feasible because of lack of time, equipment, know-how, or the expense involved in making enough solution for the purpose.

Mathematics Easy

There is a simple method, however, by which the specific gravity of any kind of solution may be calculated if the quantities and specific gravities of the substances entering the solution are known. For example: What is the specific gravity of a 10% solution, w/v, of copper sulfate ($CuSO_4 \cdot 5H_2O$) in water? If 100 cc. of such a solution were made, 10 Gm. of copper sulfate and enough water to make up 100 cc. would be required. The specific gravities of the entering substances are: copper sulfate, 2.87;* and water, 1. Since in metric units the numerical value of the specific gravity and density of a substance are practically the same, we can determine the volume of the copper sulfate by using the equation: $D = M/V$. Substituting the appropriate values, 10 for M and 2.87 for D, and solving, we find a volume of 3.48 cc. for the copper sulfate. To prepare the 100 cc. of solution, then, would require that 96.52 cc. of water must be added to the 10 Gm. (3.48 cc.) of copper sulfate. The total weight of the 100 cc. of solution would then be 106.52 Gm. consisting of 10 Gm. of copper sulfate and 96.52 Gm. of water. Substituting in the equation specific Gravity = Weight of Substance/Weight of Equal Volume of Water, we find that the specific gravity of the copper sulfate solution is 1.065.

This technique may be used to calculate the specific gravity of any solution of known concentration. It may also be used in reverse. If the concentration of the solution is known and the specific gravities of the solution and one of the components (in a solution containing two substances) are known, then the specific gravity of the other substance may be determined.

Shrinkage a Factor

Determination of specific gravity by calculation is, of course, entirely theoretical and does not take into account the shrinkage that may take place when a solution is actually produced. This phenomenon is well known in the case of alcohol–water mixtures. Such shrinkage, or possibly expansion, would produce solutions

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* *The Merck Index*, 6th ed., 1952, p. 291.

whose specific gravities, if experimentally determined, would differ from those obtained by calculation. By what amount do calculated specific gravities differ from observed, both absolutely and percentage-wise? Are these differences small enough to warrant the use of calculated specific gravities for practical pharmaceutical purposes?

The minimum tolerance permitted in standardized and extemporaneous pharmaceutical preparations is 5%. If the differences between the observed and calculated specific gravities were within 5%, then the method would have practical value. Accordingly, experimental determinations were made of the specific gravities for a variety of solutions in varying concentrations. In some cases, saturated and constant percentage solutions of different salts, both organic and inorganic, were used; in other cases, differing percentages of the same salt were used. Also, the specific gravity for alcohol–water mixtures given in the *United States Pharmacopeia* was compared with the specific gravity determined by calculation.

Experimental procedures were similar to those used in a pharmacy under conditions ordinarily found there. More refined methods would undoubtedly give more precise results. Salts were weighed on a torsion balance with analytical weights. Liquids were measured with the usual pharmaceutical glassware. Primary specific gravity determinations were made with a simple 25-cc. pycnometer, at ordinary temperatures, using the same torsion balance and analytical weights. As a further check, specific gravity determination was made with the Westphal balance.

Variation Well Under 5 Per Cent

Results of these experimental determinations, the calculated specific gravities and the absolute and relative variations, are given in Tables I and II. These tables compare determinations made for alcohol–water mixtures and 11 selected solutions at saturated and 10% concentrations. Similar comparisons were made for ammonium chloride and sodium chloride, separately, at 4% intervals (4% to 28%), and for potassium iodide at 6% intervals (6% to 96%). Detailed data on the three salt solutions are obtainable, with appropriate explanation, directly from the authors.

Table I shows the U.S.P. and calculated specific gravities of alcohol–water mixtures at 5% intervals. A 5% alcohol mixture shows a variation of −0.312%. This variation increases to a maximum of −4.12% at 60% alcohol and then recedes to a variation of −1.46% at 95% alcohol. All of these per cent variations are well under the 5% tolerance.

Table I—Comparison Between U.S.P. and Calculated Specific Gravities of Alcohol–Water Mixtures at Five Per Cent Intervals

Per Cent of C_2H_5OH by Volume[a]	Specific Gravity U.S.P.[b]	Calculated Specific Gravity	Per Cent Variation
0	1.0000	....	...
5	0.9928	0.9897	−0.312
10	0.9866	0.9794	−0.730
15	0.9810	0.9690	−1.24
20	0.9759	0.9587	−1.76
25	0.9709	0.9484	−2.31
30	0.9653	0.9381	−2.82
35	0.9590	0.9278	−3.26
40	0.9517	0.9174	−3.61
45	0.9434	0.9071	−3.74
50	0.9342	0.8968	−4.01
55	0.9241	0.8865	−4.07
60	0.9133	0.8762	−4.12
65	0.9019	0.8658	−4.00
70	0.8899	0.8555	−3.87
75	0.8771	0.8452	−3.78
80	0.8636	0.8349	−3.33
85	0.8493	0.8246	−2.91
90	0.8336	0.8142	−2.33
95	0.8158	0.8039	−1.46
100	0.7936	...	...

[a] At 15.56° C.
[b] At 15.56° C./15.56° C. U.S.P. data are from the Thirteenth Revision.

Table II compares calculated, pycnometer and Westphal specific gravities and relative variations for saturated and 10% solutions of 11 salts. Only three cases show variations between calculated and experimental determinations greater than the 5% tolerance, *vis.*, ferric chloride, sodium acetate, and resorcinol at saturation. The other eight at saturation are well within the allowed tolerance. The greatest variation for the 10% solutions is 2.011%, for ferric chloride; *none* was outside the tolerance limit.

Comparisons for varying percentage (w/v) solutions of ammonium chloride, sodium chloride, and potassium iodide, similarly developed, exhibited *in all cases* relative variations within the 5% tolerance. In most cases the divergence was very small.

Unlike the alcohol-water variations, in all of which the calculated gravity determinations were under the experimental (negative), some of the variations for the salts were positive whereas others were negative. Variations for pycnometer and Westphal determinations were in

the same direction. Generally, variations in salt solutions were proportional to concentration.

Comment

The method outlined would appear to be a practical means of determining specific gravities without the trouble, time, and expense involved in experimentation. Since standard pharmaceutical references do not provide specific gravities of pure substances, it is recommended, first, that this method be included in the usual course of pharmaceutical calculations, and that the U.S.P. and N.F. incorporate the gravity determinations in their monographs. Additional experimentation is indicated along these lines to strengthen the validity of the method.

Table II

Comparison of Calculated, Pycnometer and Westphal Specific Gravities of Eleven Salts

	Saturated Solutions					Ten Per Cent (w/v) Solutions				
		Pycnometer		Westphal			Pycnometer		Westphal	
Substance	Calculated Sp. Gr.	Observed, Sp. Gr.	Variation, %	Observed Sp. Gr.	Variation, %	Calculated, Sp. Gr.	Observed Sp. Gr.	Variation, %	Observed Sp. Gr.	Variation, %
Citric Acid	1.306	1.326	− 1.508	1.300	+ 0.462	1.036	1.041	−0.480	1.037	−0.096
Ferric Chloride	1.806	1.551	+16.44	1.547	+16.74	1.065	1.047	+1.719	1.044	+2.011
Sodium Acetate	1.024	1.182	−13.36	1.176	−12.92	1.035	1.052	−1.236	1.050	−1.429
Resorcinol	1.152	1.142	+ 0.876	1.035	+11.30	1.023	1.023	0.000	1.021	+0.169
Potassium Carbonate	1.182	1.219	− 3.035	1.219	− 3.03	1.059	1.076	−1.580	1.077	−1.671
Ammonium Chloride	1.103	1.079	+ 2.224	1.079	+ 2.22	1.035	1.031	+0.388	1.030	+0.458
Tartaric Acid	1.314	1.320	− 0.455	1.315	− 0.07	1.041	1.047	−0.573	1.046	−0.478
Lactose	1.058	1.067	− 0.843	1.064	− 0.56	1.034	1.041	−0.672	1.038	−0.385
Potassium Iodite	1.673	1.716	− 2.505	1.713	− 2.33	1.068	1.077	−0.836	1.079	−1.019
Sodium Chloride	1.169	1.201	− 2.664	1.201	− 2.66	1.054	1.072	−1.679	1.072	−1.679
Ammonium Sulfate	1.234	1.247	+ 1.042	1.246	+ 0.96	1.044	1.062	−1.695	1.060	−1.583

NOTES: Quantities for preparing the saturated solutions were obtained from Drug Topics' *Red Book*, 1951–1952 ed., p. 14. The variation per cent figures are the amounts by which the calculated specific gravities differ from pycnometer and Westphal determinations, respectively.

A New Liquid Petrolatum-Jelly Base

By J. W. Kaufman, H. M. Burlage, and W. R. Lloyd

Tragacanth, 2–3 per cent, proves satisfactory in liquid petrolatum-jelly base, with good emollient and drying features. University of Texas investigators J. W. Kaufman, Dean Burlage, and Professor Lloyd report on clinically tested gel found compatible with six familiar dermatologicals.

THE POPULARITY of emulsion and absorption-washable bases has been attributed to the easy transfer of medicament from the outer aqueous phase to the tissue or organism and to the ease of removal of the base from the tissue to which it is applied. In such bases the water-immiscible lipid phase is present to impart plasticity to the base. Jellies are completely hydrophilic systems containing no lipid constituents to interfere with the transfer of medication and exhibit the characteristics of plastic substances due to their colloidal composition. They are also washable. The jellies should, therefore, exhibit characteristics similar to the washable bases in respect to transfer of the medicament.

Jellies are subject to fermentation and are unsatisfactory bases unless protected from moisture loss (1, 2, 3). The gel structure is sensitive to *p*H, but otherwise they are compatible with most therapeutic agents. They can be protected from fermentation by the use of antiferments, and from loss of water by proper packaging and the use of humectants. Their chief disadvantage lies in the drying effect on tissue.

Jelling Agents Studied

An investigation was initiated to develop a jelly base containing a small amount of liquid petrolatum emulsified into the base which would leave a thin film of petrolatum on the skin to serve as an emollient and to minimize the drying effect.

Agar, methylcellulose, and tragacanth were studied as possible jelling agents. Agar 1% produced a satisfactory gel, but the gel was not stable alone or with liquid or white petrolatum. The gel structure exhibited syneresis on standing from two to four weeks at room temperature.

Methylcellulose 4000 3% formed a stable gel. Such gels, however, tended to roll when applied to the skin. Incorporation of glycerin and petrolatum did not improve this characteristic.

Tragacanth Most Satisfactory

As expected, tragacanth was found to produce the most satisfactory jelly base. Variations in gel strength were observed with various samples and types of tragacanth, as previously reported (4, 5). A sample of Aleppo ribbons #1 grade of tragacanth was used in the preparations reported in this study. A concentration of 2% w/w proved satisfactory for the jelly base, although it was found necessary to increase this concentration with some formulations.

Heavy liquid petrolatum was found more satisfactory in the base than petrolatum. The liquid petrolatum could be emulsified directly into the base at the 10% level, but the use of 2% sorbitan monolaurate yielded a more satisfactory product.

Tragacanth jellies protected by concentrations of benzalkonium chloride from 1:50,000 to 1:5000 were found to develop mold growth in two to three days. Sterilization of the tragacanth by boiling for 5 minutes during preparation of the gel made it possible to protect the gel against fermentation at a concentration of 1:5000.

The final formulation was:

Tragacanth	2
Glycerin	10
Heavy liquid petrolatum	10
Sorbitan monolaurate	2
Benzalkonium chloride	0.01
Water, *q.s.*	100

Procedure—The tragacanth was mixed with the required amount of water and the mixture

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brought to a boil. After 5 minutes' boiling, the mixture was cooled and the water lost by evaporation replaced. The glycerin, sorbitan monolaurate and benzalkonium chloride, in 1:1000 solution, were added. The mixture was transferred to a wide-mouth container, stoppered, and allowed to stand for 24 hours. The liquid petrolatum was emulsified into this mixture in small portions in a mortar.

Because of variation in consistency observed with different samples of tragacanth, it was deemed advisable to establish a standard for the base. Conventional methods of determining gel strength proved inapplicable to the base due to its opacity and thixotropic nature. The lattice network method of Fredell (6) was used to establish an approximate consistency value for the jelly. U.S.P. white petrolatum was used as a control. Using tubes with an opening of 5 mm. in diameter, the petrolatum value was 15 and that of the jelly was 4, as determined by the procedure described by Fredell.

Compatibility—The base was compounded with a number of frequently prescribed derma-

Compatibility of Emulsified Liquid Petrolatum-Tragacanth Base, 2% and 3%, with Various Therapeutic Agents

Active Ingredient	Per Cent Active Ingredient	Tragacanth Base, 2 Per Cent	Per Cent Active Ingredient	Tragacanth Base, 3 Per Cent
Ammoniated mercury	5	Compatible	..	...
Ammoniated mercury Resorcin	5 5	Discoloration	..	...
Benzoic acid Salicylic acid	3 3	Incompatible	..	...
Cade oil	..	....	3	Compatible
Cade oil	..	....	5	Incompatible
Cade oil	..	....	5	Compatible[a]
Coal tar, U.S.P.	5	Compatible	..	...
Coal tar, crude	5	Compatible	..	...
Coal tar solution	5	Compatible	10	Incompatible
Coal tar solution	10	Incompatible	10	Compatible[a]
Ephedrine sulfate	1	Compatible	5	Incompatible
Ichthammol	3	Incompatible	3 3	Incompatible Incompatible[a]
Phenol	..	....	2	Incompatible
Resorcinol	3	Incompatible	3	Incompatible
Salicylic acid	3	Incompatible	3	Incompatible
Precipitated sulfur	20	Compatible	..	...
Vioform	3	Compatible	..	...

[a] Concentration of sorbitan monolaurate increased to 3%

tological agents in typical concentrations. Results are shown in the table.

Sensitivity—Although the various ingredients of the base are individually relatively free of irritation, the finished base was tested for sensitivity on 100 subjects. The base was applied to the inner skin of the forearm, covered with a small disc of cellophane, and held in place with adhesive tape. At the end of 48 hours the base was removed and the skin observed for irritation. No instance of irritation was observed.

Summary

- Tragacanth in concentrations of 2–3 per cent was found to be a satisfactory gelling agent for this formulation.

- Maximum stability toward fermentation is obtained by sterilizing the jelly during preparation, and by incorporating benzalkonium chloride at a concentration of 1:5000 to 1:10,000.

- A consistency standard has been established for the base using the method of Fredell.

- The base is compatible with ammoniated mercury, coal tar, ephedrine sulfate, cade oil precipitated sulfur and vioform. Organic acids, phenolic compounds, and ichthammol are not compatible with the base.

- No evidence of irritation was observed when the base was applied to the skin of 100 subjects.

- Agar and methylcellulose did not prove to be satisfactory gelling agents for the formulation of a liquid petrolatum-jelly base.

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Health Facilities Survey

Health Information Foundation is sponsoring a nationwide survey to find out how people feel about health facilities, health personnel, and voluntary health insurance. The study is expected to reveal people's attitudes and practices regarding all medical services, including dental care, drugs, and medications.

Purpose of the study, according to George Bugbee, foundation president, "will be to compile data useful to all groups which encourage through education the wisest use of health services and the broadest distribution of medical care." It will be financed through a $100,000 grant by the foundation, a non-profit organization sponsored by 200 leaders in the drug, pharmaceutical, chemical, and allied fields.

Research will be conducted by the National Opinion Research Center at the University of Chicago, the same agency which conducted the foundation's "National Family Survey of Medical Costs and Voluntary Health Insurance" last year.

According to the foundation, the "Family Survey" showed that an individual's ability to pay for care is only one factor in the degree to which he uses health services. Other factors include his personal interest in care, his knowledge of the value of medical care, his attitudes toward the cost of medical services, the amount of health insurance protection he carries, and the availability of those services in his community. These areas are to be explored in the new study. Results are expected to be ready for publication in eighteen months.

Klumpp Says Activity Is Best for Oldsters

Present methods of caring for the aged and chronically ill in the U.S. should be drastically overhauled so as to "restore their incentive to live, work and create" rather than abandoning them to a "rocking chair" existence, Dr. Theodore G. Klumpp, president of Winthrop-Stearns Inc., told the National Association of Methodist Hospitals and Homes.

Dr. Klumpp accented the gravity of the problem by citing statistics showing "we are becoming a nation of oldsters." With some 13,000,000 persons today who are 65 years of age and over, by 1980 this figure is expected to jump to 32,000,000. Added to this total, he noted, are approximately 2,500,000 handicapped and more than 27,000,000 people with a chronic disease.

"In the vast majority of cases," said Dr. Klumpp, "continued activity and physical exercise, both passive and active, are an essential prelude to health and rehabilitation. Psychologically they are important because most people, particularly older individuals, are not basically happy when they are idle."

Solubility Study on Gentian Violet*

By Francis V. Tura, Mitchell J. Stoklosa, and Arthur J. McBay

New data on the problem of solubility of commercially available gentian violet in water is presented by F. V. Tura and Associate Professors Stoklosa and McBay of the Massachusetts College of Pharmacy.

THE NATIONAL FORMULARY monograph on methylrosaniline chloride (gentian violet) gives the solubility of the dye as 1 Gm. in 30 to 40 cc. of water. From these solubility figures it is evident that it would be impossible to make an aqueous solution of gentian violet in a concentration of more than about 3 per cent. However, physicians prescribe solutions of the dye in concentrations exceeding the official solubility limits. This is indicated by a nationwide prescription survey (1) which reveals that about 4 per cent of the prescriptions for solutions of gentian violet specify 3 per cent or more of the dye.

It has been reported that in attempting to prepare such solutions pharmacists have experienced difficulty dissolving the gentian violet and keeping it in solution. Since solubility of the dye in alcohol is much greater than in water, the use of alcohol as an intermediate solvent has been suggested in preparing solutions in concentrations over 3 per cent.

Commercial Samples Variable

In the preliminary experiments leading to this investigation, attempts to formulate a solubility curve for gentian violet in a water-alcohol system indicated that certain commercial samples of the dye, marketed under such designations as Pyoktanin, gentian violet, crystal violet, methyl violet, and methylrosaniline chloride, N.F., were soluble in water to a greater extent than is indicated by the official solubility limits. The experiments also indicated that the solubility of the samples in water was variable. These differences were probably due to the fact that the composition of the commercial products is variable and depends upon the amounts of hexamethyl, pentamethyl, or tetramethyl derivatives of pararosaniline or of rosaniline in the samples. It is probable that if the mixture of these components were always constant, the solubility would also be constant. That the official product is defined as hexamethylpararosaniline chloride, usually admixed with pentamethylpararosaniline chloride and tetramethylpararosaniline chloride, is an indication that it too is of variable composition. It would seem logical, therefore, to call these compounds rosanilines rather than pararosanilines since both the para and the isomeric rosanilines might be present, and the pararosanilines are definite compounds whereas the rosanilines are not.

Because it was apparent that the solubility in water of different samples of gentian violet was variable, this study was undertaken in an attempt to check the accuracy of the National Formulary statement concerning the solubility of the dye in water.

Samples of gentian violet for this investigation were commercial samples available in the Boston area: Pyoktanin (Merck), methylrosaniline chloride (Merck), and crystal violet (National Aniline). All samples used in these determinations conformed to the specifications of N.F. IX.

The Working Curve

The method of determining the amount of gentian violet in solution was a modification of the McIntyre and James method (2) used for determining the amount of the dye in tablets of gentian violet.

Approximately 200 mg. of the dye was accurately weighed and completely dissolved in water; further dilutions of this solution were made so that the final solution contained between 1 and 2 mcg. of the dye per ml. The absorbance of the solution was then determined in the Coleman Junior Spectrophotometer at 5 mμ intervals between wavelengths of 400 to 700 mμ. The spectrogram that was obtained agreed with that of Michaelis and Granick (3). The absorbance

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* Abstracted from a thesis presented to the Graduate Council of the Massachusetts College of Pharmacy by Francis V. Tura in partial fulfillment of the requirements for the degree of Master of Science in Pharmacy.

Table I—Relationship Between Concentration and Absorbance for Crystal Violet[a]

Concn. mcg./ml.	Abs. at 580 mμ	Concn. Abs.
2.300	0.620	3.709
1.840	0.500	3.681
1.604	0.440	3.645
1.470	0.400	3.675
1.283	0.355	3.614
1.180	0.325	3.631
1.026	0.290	3.537
0.820	0.230	3.565
	ave.	3.63

[a] National Aniline (gentian violet).

Table II—Relationship Between Concentration and Absorbance for Pyoktanin[a]

Concn. mcg./ml.	Abs. at 575 mμ	Concn Abs.
2.330	0.610	3.820
2.152	0.565	3.809
1.860	0.500	3.720
1.722	0.462	3.727
1.490	0.400	3.725
1.378	0.375	3.675
1.190	0.330	3.605
1.102	0.300	3.673
	ave.	3.72

[a] Merck (aniline violet, gentian violet, methylrosanilin chloride, N.F.).

of solutions containing between 1 and 2 mcg. per ml. was determined at the maximum absorbance for each of the materials used; the maximum absorbance for crystal violet was at 580 mμ, and for both Pyoktanin and methylrosaniline chloride (Merck), 575 mμ. By plotting concentration versus absorbance it was found that, although the points did not fall in a straight line, they fell close enough to the line to indicate that this method was accurate enough for determining solubility. Dividing the concentration by the absorbance shows that there is a slight change in the slope of the curve. If the determinations are kept within the range of 1 to 2 mcg. per ml. and the average value is used, the error will be under 5 per cent. In fact, the average value of the slope for the three samples tested would be 3.66; and when this value is used within the same range, the error will still be under 5 per cent.

The relationship between concentration and absorbance for each of the samples used is given in Tables I, II, and III.

Assay Method

Approximately 3 Gm. of the dye was shaken for three hours with about 25 ml. of water at 25° C. The solution was immediately filtered through Whatman No. 1 filter paper into a Leach specific gravity bottle, which was found to contain 10.18 ml. of water at 20° C. The excess solution forced from the overflow tube was cleaned from the outside of the bottle with a tissue dampened with alcohol.

Concentrated solutions of gentian violet are so dark that it is impossible to read the meniscus in ordinary volumetric equipment; therefore the pycnometer was used to obtain analytical precision.

The contents of the bottle and the adhering solution on the thermometer were washed with alcohol into a 1000-ml. volumetric flask until the rinsings were free from the characteristic purple color. The flask was filled to the mark with water and the liquid was thoroughly mixed. Again the pycnometer was filled, this time with the dilution; and the contents were washed with alcohol into a 100-ml. volumetric flask. The flask was then filled to the mark with water and the solution was thoroughly mixed. A portion of the second dilution was measured from a bulb pipette into a 100-ml. volumetric flask. The flask was filled to the mark with 95 per cent alcohol, and the solution was completely mixed. The absorbance of the alcoholic solution was determined with 95 per cent alcohol as the blank.

The percentage (w/v) of the several solutions was obtained by the following equation:

$$\text{Gm./100 ml.} = \frac{3.66 \times 1000 \times 100 \times 100 \times 100 \times A}{10.18 \times 10.18 \times 1{,}000{,}000 \times B} = \frac{3.53 \times A}{B}$$

where A = absorbance, B = ml. used in final dilution, and 3.66 = average slope.

To test this modified method of assay, a series of unknown samples were assayed spectrophotometrically and by the gravimetric method described below.

A weighed amount of each of the solutions was evaporated to dryness on a water bath, and the results were compared with the results obtained by the spectrophotometric method. Some of the unknown samples contained alcohol as the solvent, and as a result they showed a higher solubility. The results of these tests are shown in Table IV.

The saturated solutions for determining the solubility were made by shaking approximately 3 Gm. of the dye with 25 ml. of water for three hours at 25° C. Shaking for longer periods of time produced no appreciable increase in concentration. A shorter period of shaking probably would have been sufficient.

Table III—Relationship Between Concentration and Absorbance for Methylrosaniline Chloride[a]

Concn. mcg./ml.	Abs. at 575 mμ	Concn./Abs.
2.320	0.605	3.835
2.050	0.550	3.727
1.865	0.500	3.712
1.640	0.450	3.644
1.454	0.405	3.644
1.312	0.367	3.757
1.184	0.330	3.588
1.048	0.300	3.493
	ave.	3.65

[a] Merck (gentian violet, methyl violet).

Five different commercial samples were assayed by the modified spectrophotometric method of assay. The results are shown in Table V.

Results

The results of these determinations were variable although laboratory conditions and procedures were always constant; but in each instance the solubility was greater than that indicated by the official monograph.

In an effort to determine the rate of solution of gentian violet, three solutions were prepared by shaking 3 Gm. of the dye, which had previously given a mean solubility of 9.6 per cent (*w/v*), with 25 ml. of water for 5, 10, and 30 minutes, respectively. The temperature was maintained at 25° C. After the designated period of agitation, each solution was immediately filtered and assayed. The figures below indicate the percentage (*w/v*) of gentian violet in solution after the several intervals of shaking.

5 minutes	10 minutes	30 minutes
3.6	7.6	9.5

In a second attempt to check the rate of solution, two samples were prepared by shaking 1.5 Gm. of the dye with 30 ml. of water (approximately 5 per cent, *w/v*) for 5 and 10 minutes, respectively, at 25° C. The sample prepared by shaking the dye and water for 5 minutes assayed 3.8 per cent (*w/v*) and the one made with a 10-minute period of agitation assayed 4.5 per cent (*w/v*).

Table IV—Comparison of Spectrophotometric with Gravimetric Methods for Determining Solubility of Gentian Violet

Sample	Spectrophotometric Method Gm. per 100 ml.	Gravimetric Method Gm. per 100 Gm.
A	3.6	3.3
B	3.6	3.4
C	4.8	4.6
D	5.1	4.8
E	5.7	5.5
F	7.6	7.7
G	9.6	10.2
H	11.6	12.0

Table V—Solubility Determinations of Gentian Violet

Sample	Gm. of Methylrosaniline Chloride per 100 ml. of Solution
A	6.4
B	7.1
C	8.1
D	8.8
E	9.4

The experimental data indicate that, at 25° C., the commercial samples of gentian violet used in this investigation were soluble in water to a greater degree than that indicated by the official solubility figures. The solubility of the several samples varied from about 1 in 11 to 1 in 16. It is recommended, therefore, that consideration be given to the correction of the official statement concerning the solubility of the dye in water.

It can be concluded from the experiments on the rate of solution of gentian violet that solutions ranging up to 4.5 per cent in concentration can be prepared by shaking the dye with the required amount of water for about 10 minutes. As an aid in preventing the lumping of the dye when it is wetted, it is recommended that all the solvent be put into the bottle before the dye is introduced. For convenience in extemporaneous compounding, however, the use of stock solutions is suggested. Stock solutions can be prepared in concentrations within the solubility limits by occasionally shaking the dye with water for about three hours.

Summary

- Saturated solutions of several commercial samples of gentian violet were prepared and assayed spectrophotometrically.
- Results of the assays indicate that solubility of the samples in water, at 25° C., was greater than that indicated in the official monograph.
- A change in the official monograph is recommended.
- The use of stock solutions of gentian violet is suggested for extemporaneous compounding.

References

(1) Information supplied by *The National Prescription Audit.* Research Society, Inc. Boston, 1953.
(2) McIntyre, J. D., and James, A. E., THIS JOURNAL, *Sci. Ed.*, **36**, 150(1948).
(3) Michaelis, L., and Granick, S., *J. Am. Chem. Soc.*, **67**, 1212(1945).

Typical Days

FROM THE SECRETARY'S DIARY FOR MARCH, 1955

2nd An interesting chat with Admiral Bartholomew Hogan, newly appointed Surgeon-General of the U. S. Navy, whose estimate of the importance of pharmacy augurs well for the future of our profession in that branch of the military service.

7th Arriving this afternoon at Miami Beach and meeting at once with Messrs. Stadnick and Weaver, co-chairmen of the convention committee, who have been busy organizing local pharmacists into committees to handle the various details.

10th This afternoon, meeting with the whole convention committee in Tommy Adkins' office at the Crandon Drug Company, with special emphasis on convention entertainment and its financing. The friendly approach of the local committee to all convention details and the outlook for a proper proportioning of business and pleasure for those who will come to Miami Beach assures a splendid week of well-rounded activity.

15th Many calls from long-distance points dealing principally with the Miami convention program and in the afternoon a conference with the outgoing and incoming Surgeons General of the Army and members of their staff, on complaints received from men in the service who think they have been improperly assigned.

21st Now discussing ways and means for the better professional utilization of pharmacists and conferring at length with Colonel Eanes of Selective Service on the future supply of pharmacists for the armed forces. Also learning that various professional groups will soon be in over-supply in the army and consequently assigned to straight military duty rather than being commissioned in their respective fields. Late this evening on the train to Hartford, Conn.

22nd Met early in the morning by Felix Blanc of the Connecticut Board of Pharmacy and traveling in the rain with him, Inspector Goodmaster and Melvin Green to Storrs for examination of the Connecticut University College of Pharmacy in behalf of the American Council on Pharmaceutical Education. Inspection of the laboratories and class rooms, a luncheon meeting with faculty and administrative officers of the university and separate conferences with Dean Hewitt and members of his faculty give one the impression that this institution is headed for big things in both undergraduate and graduate education.

23rd Today conferring by telephone with Dal Bruner of the Iowa Pharmaceutical Association, and Secretary Lull of the A.M.A. on problems of polio vaccine distribution which have arisen in Iowa, and later a number of calls from other states indicating that the problem of equitable distribution of the Salk vaccine may result in some headaches.

24th Most of the day conferring on educational, research and drug distribution problems and discussing at length with Dr. Archie Palmer of the National Research Council the part played by the drug industry in the field of patents, trademarks and international relations concerned therewith.

25th All day with the National Health Council in New York. The morning spent at the annual meeting of delegates from the 48 constituent organizations and, in the afternoon, attending the meeting of the Board of Directors which spent a great deal of time reviewing the Health Careers project designed to interest promising young people in careers in one of the health professions covered in a new publication just issued by the Council and distributed to vocational advisers in more than 29,000 high schools and junior colleges throughout the country.

28th Much discussion today on the hospital pharmacy institutes which we are fostering jointly with the American Hospital Association and the A.S.H.P. At noon a luncheon in the national Capital as guest of Senator Alexander Wiley who had gathered together a group of prominent senators, with Commissioner Anslinger, representatives of the drug industry and the professions of pharmacy and medicine to discuss various phases of the narcotic drug problem.

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WARNER-CHILCOTT

Collector's CORNER

By George Griffenhagen

Just off the Press

The series of monographs on apothecary shop restorations in the United States which appeared in THIS JOURNAL from April 1953 to August 1954 has now been reprinted in pamphlet form. Like the original series, the pamphlet is entitled *Early American Pharmacies*, and describes 35 of these fascinating museum restorations from Maine to California. The 24-page pamphlet, paper-bound with an attractively designed cover, is available for 50 cents a copy. Send your orders directly to THIS JOURNAL. The American Institute of the History of Pharmacy has already ordered copies for its members.

Olliffe's 150th Anniversary

While neither a museum restoration nor a collection of pharmaceutical antiques, William M. Olliffe's at No. 6 Bowery, New York, N. Y., presents in appearance a magnificent and charming combination of both. This year Olliffe's Pharmacy, now operated by Herbert M. Wilks, celebrates its 150th anniversary. The large mahogany drawers rise along either wall of the shop as they did when the store was established on its present site in 1805, and the shelves are bedecked with handblown specie jars from the mid-nineteenth century. According to Wilks, the front of the shop has been "touched up" and a prescription room has been added. Otherwise, little has been changed. Congratulations to Olliffe's on its 150th anniversary.

Bethlehem Apothecary (Pa.)

What has been generally considered to be the "oldest drug store in the United States" still in operation, is no longer in business. Last September the Bethlehem Apothecary Shop quietly closed its doors as an active establishment. However, this correspondent has learned from Mrs. Henry B. Rau, curator of the Bethlehem Historical Museum, that all of the original equipment still extant will be preserved, and the shop will be opened as a museum later this year.

More Collectors

Last December this column carried the names of several outstanding private collections of pharmaceutical antiques in this country. Here are some more: **Wayne B. Westrope,** owner of the Wayne Drugstore in Geneva, Ill., has a select collection, including a 1700 pill tile decorated with the coat of arms of the Society of Apothecaries (London); an 18th century mahogany medicine chest which was brought to Canada in 1791 by the Duke of Kent; a Toltec (Mexico) apothecary jar dating from 900 A.D.: and a Persian jar said to be circa 1200.

John Gerhard of 1247 West Allegheny Ave., Philadelphia, Pa., has accumulated in the basement of his home some 2,500 items of historical pharmaceutical Americana. Gerhard, a graduate of the Philadelphia College of Pharmacy in 1905, has been collecting for the past 40 years and would now like to sell his entire collection to some museum where it will be permanently preserved.

Samuel Aker of 365 Madison Ave., Albany, N.Y., has specialized in collecting original packages of early proprietaries; while **T. W. Hoskins** of 1226 Audubon Park, Louisville, Ky., has organized his collection into classes illustrative of the inventive genius of bygone pharmacists. **William M. Gould** of 521 West Lombard St., Baltimore, Md., owns the original equipment from the pioneer drug firm of John F. Hancock. **Ralph S. Thomas** of 1820 Norton Ave., Independence, Mo., owns one of the few privately owned complete sets of United States Pharmacopeias in this country.

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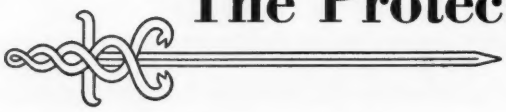
The Sword Is The Protector of All*



Back a few centuries when a literate person was a rare phenomenon in the American colonies, innkeepers and tradesmen depended on pictorial signs for identification of their establishments. For a date at a tavern, one said "I'll meet you at the sign of the Brown Jug." Or if you wished to find a barber, or a surgeon, you simply looked for the striped pole signifying both professions.

That quaint but necessary custom in our country passed along with illiteracy, but it has its parallel now in a familiar usage—that of identifying many phases of modern life with symbols.

Today one of the most important of these symbols is the American Cancer Society's sword. For years that sign, on a flag, a door, a window, or an inner wall, has been a rallying point for legions of socially-minded people—physicians, research scientists, and laymen—all deeply concerned about cancer control.

Cancer research seeks to establish the facts of cell life. It tries to determine how the normal cell lives, grows, ages, and dies. Once these facts are known, it will be much easier to learn why the cancer cell never ages and why it never dies until it has killed the host which harbors it.

Last year, more than 230,000 Americans died of cancer. Many of these lives were forefeited to ignorance or delay. An important part of the American Cancer Society education program consists of alerting people to cancer's "seven warning signals." These are:

1. Any sore that does not heal
2. A lump or thickening in the breast or elsewhere
3. Unusual bleeding or discharge
4. Any change in a wart or mole
5. Persistant indigestion or difficulty in swallowing
6. Persistent hoarseness or cough
7. Any change in normal bowel habits

The appearance of any of these symptoms does not mean, of course, that cancer invariably is present. But a doctor should be consulted immediately. Since untreated cancer always spreads, delay is serious.

American Cancer Society statistics show that the average cancer victim has a 50 per cent chance of recovery—but that can be "insured" only if the patient is treated in an early stage of the disease.

Early treatment of course depends on early diagnosis. Some types of cancer are revealed by easily recognizable early symptoms. Others, known as "silent cancers," can be detected in an initial form only by a doctor.

To insure against these enemies that lie in ambush for humans, every adult should have a yearly physical check-up. Men over 45 also should have a twice-yearly chest x-ray and women over 35 a semiannual pelvic examination.

The sword, then, with serpents entwined around its hilt, symbolizes the most determined attack in our history on "mankind's cruelest enemy." And it has become an emblem of hope for thousands of former cancer patients whose lives were saved because of early detection and prompt and adequate treatment. Many more thousands can be saved annually if we use to the fullest the information and skills now available in the medical field.

Under the sign of the conquest-of-cancer sword, hundreds of thousands of volunteers work in the Spring educational and fund-raising crusade of the American Cancer Society. Its goal for the whole nation for 1955 is $24,000,000, to be used for research toward finding new cures, service to patients, and education not only of doctors and scientists, but of all lay people in the United States, about the realities of cancer and the possibilities of defeating it.

It is estimated that this year more than 700,000 Americans will be under medical care for cancer. Because of the high medical costs and the long period of cancer illness, a severe financial burden will be placed on these patients and their families. The American Cancer Society, to the extent of funds available, helps finance diagnostic and treatment facilities for needy cancer patients.

To make certain that this life-saving program will continue without interruption, we owe it to ourselves to contribute generously to the cancer-control fund-raising campaign. It will pay dividends in lives saved—and one of them may be your own.

---

* Seneca: *Hercules Furens, c. 50.*

New A.PH.A. Members

CALIFORNIA

Huitric, Alain C., San Francisco
Ledington, William J., Loma Linda
Mower, Galvin R., Rodeo
Quon, Frances, El Cerrito
Yuzuriha, Shigeru, San Francisco

FLORIDA

Dell, Carl M., Miami
Kasdin, Julius, Miami Beach
Onkey, John P., Miami
Schultz, Louis, Miami Beach
Spector, Sheldon, Miami Beach
Stein, Merrill S., Miami

GEORGIA

Watson, Charles L., Thomasville

ILLINOIS

Bay, Paul G., Chicago
Cermak, John J., Chicago
Devine, Harold A., Morton Grove
Hooper, Joseph C., Oak Park
Johnson, Thomas L., Peoria
Schma, John W., Chicago
Solyom, Peter, Jr., Chicago
Spinner, Louis C., Springfield

INDIANA

Duncan, Frank B., Mishawaka
Passo, Charles H., Indianapolis
Prange, Louis W., Fort Wayne

IOWA

Wiley, Robert W., Waverly

KANSAS

Gillispie, James W., Lawrence
Turner, Norton K., Wichita

LOUISIANA

Moskowitz, Ralph, New Orleans

MARYLAND

Danziger, David G., Baltimore
Krucoff, Maxwell, A., Baltimore
Rosenthal, Alvin, Baltimore

MASSACHUSETTS

Stacks, Nathan K., Boston

MICHIGAN

Corrado, Joseph A., Zeeland
Jensen, Erik H., Kalamazoo
Lang, Harry I., Pontiac
Rogers, Richard H., East Ann Arbor
Wilson, Richard, Birmingham

MISSOURI

Hamilton, Howard C., Kansas City
Van Peursem, Delbert L., Webster Groves

NEW JERSEY

Discher, Clarence A., Newark
Higgins, Bertrand, Roselle Park
Kozal, Robert S., Fords
Kurica, George M., Perth Amboy
Madia, Valdemar H., Fair Lawn

NEW YORK

Brennan, Robert J., Levittown, L. I.
Doerr, Charles D., New York City
Gary, Howard J., Syosset
Kalbfeld, Louis P., Gloversville
Myers, Howard E., New York City
Thornhill, Harry, Levittown, L. I.
Tinsley, Stuart B., New York City

NORTH CAROLINA

Pittman, James H., Durham

OHIO

Davis, Anna, Akron
Figley, William W., West Liberty

OREGON

Brooks, Bob L., Salem

PENNSYLVANIA

Callaway, Jehu, Washington
Carlo, Pierre-Emmanuel, Philadelphia
Hicks, Pearl B., Philadelphia

TEXAS

Moorman, Artie Lee, Galveston
Newman, Jesse Lee, McKinney
Sister Mary Dolorita Stack, Houston

Deceased Members

Brown, Francis C., New York City
Carruth, Luther E., Sr., Ponchatoula, La.
DeLuca, Carmine T., Berwyn, Pa., Sept. 23, 1954
Dewey, Bartlett T., Portales, N. Mex., Dec. 6, 1954
Eitner, Albert G., Salt Lake City, Utah, Feb. 14, 1954
Herzog, Sol A., New York City, Feb. 27, 1955
Holcom, William L., West Des Moines, Ia. Missing in action; presumed deceased Dec. 31, 1953
Kebler, Lyman F., D. C., Mar. 4, 1955 (Life Member)
Murphy, Dennis E., Cincinnati, Ohio, July 17, 1954
Sister Hildegarde Bierman, Taylorville, Ill., Mar. 7, 1954
Turner, Patrick H., Sabetha, Kans., Oct. 3, 1954

Obituaries

Dr. Thomas Lewis died in New York City, January 29, 1955, at the age of 65. He was born in Bridgend, Wales, attended the University of London, and received the degree of B.S. from the London Board of Education and subsequently the Ph.D. (Hon.) degree from the University of Cardiff, Wales. He served as director of the Welsh College of Pharmacy at Cardiff from 1919 to 1929 and as a member of the Board of Examiners of the Pharmaceutical Society of Great Britain from 1923 to 1929.

In 1930 Dr. Lewis came to the United States to accept a position with the S. B. Penick Company and soon became its technical director and later vice president. He served in these capacities until September, 1952, and was instrumental in developing a number of its products.

In 1948 he was elected to fill a vacancy on the U.S.P. Revision Committee; he was reelected in September, 1950. Dr. Lewis also served during the past five years as a member of the Subcommittee on Pharmacognosy of the N.F. Revision Committee. He was a member of the Committee on Research of the American Proprietary Association, the Combined Contact Committee of the American Drug Manufacturers Association and American Pharmaceutical Manufacturers' Association, the Board of Management of the New York Botanical Garden, and of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Sol A. Herzog, authority on pharmaceutical law and legislation and sometime special deputy assistant attorney general of the State of New York, died February 27. Herzog, a practicing attorney as well as a professor at the College of Pharmacy of Columbia University, was well known for his strong stand in favor of pharmacists' rights and thereby of public health. Only a few months ago he emphasized in a stirring address presented at the Rutgers Pharmaceutical Conference and entitled "Public Health *vs.* Private Greed" that nothing but harm can come from unrestricted sale of medicines. His latest paper, a dispassionate discussion of "The Durham-Humphrey Act—Two Years After" appeared in print almost exactly on the day of his untimely demise. He was a member of the A.PH.A.

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Thiamine mononitrate	10 mg.
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Vitamin B_{12} activity	4 mcg.
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A.PH.A Branches

Local Branches

The January meeting of the **Northern California Branch** was given over to installing the group's new officers, headed by President Felix Conte. Marc Laventurier is vice president; Stephen Dean, Jr., treasurer; Marie B. Kuck, secretary. Don Mythen was installed as a member of the board of directors.

The use of visual aids in professional selling was the topic at the February meeting of the **Northern New Jersey Branch,** presented by Raymond Hetterick, executive vice president at The Harrower Laboratory.

Officers of the **New Orleans Branch** are as follows: President, Troy L. Carter; Vice President, Gladys Hebert; Secretary, Ben Bavly, and Treasurer, Peter H. Lemoine. The next election of officers will be held in September, 1955.

The **Western New York Branch** of the A.PH.A. met jointly with the Erie County Pharmaceutical Association and the Medical Society on March 22 at the Hotel Statler, Buffalo, N.Y. Dr. Dale G. Friend of the Harvard Medical School and Peter Bent Brigham Hospital spoke on "Observations on Some of the Newer Drugs." A buffet followed the meeting.

George F. Archambault, president of the American Society of Hospital Pharmacists, addressed the February meeting of the **Puget Sound Branch,** held jointly with the Washington State hospital pharmacists. His topic was "The Future of Hospital Pharmacy".... The St. Louis Chapter of the A.S.H.P. met with the **Greater St. Louis Branch** of the A.PH.A. March 23 at the St. Louis College of Pharmacy. A large audience heard Charles C. Rabe, member of the A.PH.A. staff, address the meeting.

The **City of Washington Branch** held its March meeting at the Smithsonian Institution. After the regular session, George Griffenhagen, associate curator of Medicine and Public Health at the Institution, conducted the members on a tour of the exhibits in the Medical Gallery of the museum.

A.PH.A. President Newell Stewart addressed the **New York Branch** March 14 at Columbia University College of Pharmacy on "Problems Facing Pharmacy Today." Branch President Irving Rubin presided.

Members of the **Indianapolis Branch** met March 17 to see the film "Chronic Barbiturate Intoxication," produced by the U.S. Public Health Hospital at Lexington, Ky. Dr. Charles Gruber, who is in charge of research on hypnotic and analgesic drugs at the Lilly Clinical Research Division in the Indianapolis General Hospital, led the discussion on the subject.

The **Southeast Wisconsin Branch** March meeting heard Dr. William Foye of the University of Wisconsin on the chemical relationship of sympathicolytic and anticholinergic drugs. The booklet "Career Guidance," published by the University's Association of Women Students, was displayed at the meeting. The Branch had sponsored the article on pharmacy.

"Symposium on Hypertensive Drugs," a Wyeth film, was shown at the March meeting of the **Northwestern Branch** in Minneapolis. New Branch officers are: Sam Levin, president; Ken Howell, vice president; Louise Hunkins, secretary.

Student Branches

A panel of hospital pharmacists appeared at the February meeting of the **University of Arizona Branch.** Three members of the state's Society of Hospital Pharmacists discussed the pharmacist in state, federal, and private institutions. New officers elected were: President, John Lugo; Vice President, Robert Taylor; Second Vice President, Wesley Anderson; Treasurer, Edward Saba; Secretary, Grace Hunt; Sergeant-at-Arms, Donald Skaggs.

Byron Rumford, assemblyman and pharmacist, outlined legislative procedure before a meeting of the **University of California Branch.** The unit has appointed a committee to raise money for sending two delegates to the Miami

A.PH.A. convention in May. Films seen by the Branch during the past semester were the Parke, Davis documentary on epilepsy, "Kidneys and Health" from Eli Lilly, on Ergotamine and migraine headaches from Sandoz Pharmaceuticals, and on the use of ACTH from Armour Laboratories.

The **Southwestern State College Branch** has awarded a second scholarship this year. First grant of $65 went to Don Dowling in October. This semester's recipient was Virgil Janzen. The January meeting heard Connie Masterson, owner of four professional pharmacies in Oklahoma City, speak on management personnel and relations. . . .**Howard College** (Ala.) **Student Branch** heard a description of the structure of state pharmaceutical associations.

Members of the **University of Utah Student Branch** will stage a "junior" A.PH.A. convention two weeks after the "real thing." Scheduled for May 19, the "convention" will familiarize students with the functioning of the ASSOCIATION. The Branch's delegates to the Miami convention will present a paper before the Student Section on the project.

The February meeting of the **University of Nebraska Student Branch** gave members an opportunity to discuss "What Should Be Done to Maintain the Average Pharmacy Student's Interest in the Profession's Current Affairs?" A program was developed for topics at future meetings.

"Can the Proprietor Afford the Five-Year Plan?" was the subject of a panel discussion last month at the **Wayne University Student Branch.** The purpose was to stimulate thinking, with no attempt made to formulate definite conclusions. . . . The second panel discussion of the year at **Philadelphia College of Pharmacy and Science Student Branch** also considered the five-year program with emphasis on the proper composition of the courses.

In February and March, the **University of Colorado Student Branch** held panel discussion meetings on subjects in which members are taking an active interest, such as pending state legislation, fair trade, and other problems facing the retail pharmacist.

At its February meeting the **University of Kansas Student Branch** featured a discussion on "Physician-Owned Pharmacies and Dispensing Doctors." The discussion was led by Clara Miller, secretary of the Kansas Pharmaceutical Association, and Marion King, president of the Kansas State Board of Pharmacy.

Dean W. D. Strother and Dr. Charles Schwartz and four members of the **Southwestern State College Student Branch** met with Dean Ralph Clark and four members from the **University of Oklahoma Student Branch** at Oklahoma City on February 26. This was the first of a series of meetings planned by the two schools to promote friendly relations between their faculties and students. Mutual problems were discussed, after which the group attended the afternoon session of a sales meeting sponsored by the Fox-Vliet Drug Company.

University of Maryland Student Branch heard a talk by Abbott's David Stiles on "The New Look in Pharmacy." Subsequent meetings considered "The Part of the Wholesaler in Pharmacy" with James Allen, vice president of Henry B. Gilpin Company, as the speaker, and "Hospital Pharmacy and Public Health Internships," delivered by George Archambault, chief of the Pharmacy Branch in the U.S. Public Health Service.

A joint meeting of the **Loyola University Student Branch** and the Women's Auxiliary of the L.S.P.A. brought an attendance of 90 on March 9. The Auxiliary's president spoke on the purposes of their annual book award for the highest average in each class.

The March meeting of the **University of Wisconsin Student Branch** was highlighted by a movie illustrating the cancer research program at the University. The cancer problem was discussed briefly by Dr. James M. Price of the University Cancer Research Hospital.

A talk by Nicholas Gesoalde, secretary of the New York State Pharmaceutical Association attracted an attendance of 101 to the February meeting of the **Fordham University Student Branch.** He spoke on the pharmacy ownership law, national board examinations, and reciprocity. The Branch's March meeting heard Bernard Gordon of Lederle Laboratories on "Why Prescriptions Cost So Little."

The Mortar and Pestle Society, A.PH.A. **Student Branch** at the **University of Florida,** held its first meeting of 1955 on February 14. Presiding was Albert Lagano, recently elected

to the presidency. Also elected were: Vice President, Richard Carr; Secretary, June Rowell; Treasurer, Henry J. Darden; Reporter, James A. Perlin. Dr. Perry A. Foote, dean of the College of Pharmacy, addressed the 50 members in attendance, on the progress of the Society.

New president of the **Rutgers University Student Branch** is Joseph Micale; Barry Kass is vice president; Charles Kastenberg, treasurer; and David Asbel, secretary.... **University of Pittsburgh Student Branch** announces the following change of officers: President, Constantine G. Hampers; 1st Vice President, William Armor; 2nd Vice President, Sylvan Alpern; Secretary, Donald H. Overstreet; Treasurer, Donald Utescher.

Stanley Kulakowski has been named president of the **University of Michigan Student Branch;** Vicki Middleton, vice president; Marga Underhill, secretary; and Dora Mae Pierce, treasurer....**Toledo University Student Branch**'s new officers are Charles King, president: Alan Baer, vice president; James Gemuenden, treasurer; Dwain Hoffer, secretary; Ronald Greenbaum, sergeant-at-arms.... New **University of Mississippi Branch** president is John E. Haynes; Jasper J. Rampolla is vice president; Robert M. Floyd, secretary; and William E. Farlow, treasurer.

During the week of March 21, Charles C. Rabe, assistant to the secretary of the A.PH.A., visited and addressed the Student Branches at the **University of Pittsburgh, University of Kentucky, St. Louis College of Pharmacy and Allied Sciences, University of Kansas City, University of Kansas,** and the **University of Nebraska.**

W. L. Dempsey Heads HIF Board

At the annual meeting of the Board of Directors of the **Health Information Foundation** held in New York, March 25, W. L. Dempsey, president of Sharp & Dohme Division of Merck & Co., Inc., was elected chairman of the board, succeeding John G. Searle, president of G. D. Searle and Co. Other officers elected were: President, George Bugbee, HIF president; Vice Presidents: James Hill, Jr., president, Sterling Drug Co.; John G. Searle, president, G. D. Searle & Co.; George F. Smith, president, Johnson & Johnson; George Van Gorder, president, McKesson & Robbins; Ernest H. Volwiler, president, Abbott Laboratories; Treasurer, S. Barksdale Penick, Jr., president, S. B. Penick & Co.; Secretary, William A. Feirer, vice president, E. R. Squibb & Sons.

George Bugbee reviewed the progress of the Foundation since its organization over five years ago, reporting on the significance of past Foundation projects such as the "National Survey of Family Medical Costs and Voluntary Health Insurance." He also spoke briefly about a number of projects in the process of development such as the survey which will measure public knowledge and attitudes toward the medical profession, hospitals, the field of public health, and the drug industry.

Pharmacy and the Conquest of Disease*

Columbia University, in a way, celebrated this month three hundred and twenty-five years of progress by happily combining the bicentennial anniversary of the University itself and the hundred and twenty-fifth of its College of Pharmacy.

The occasion was signalized by a joint conference on Pharmacy and the Conquest of Disease held on October 14 and 15 at the McMillin Academic Theater, in which the modern chemistry of therapeusis really came into its own. Fittingly enough one of the world's most distinguished producers of pharmaceutical substances, George W. Merck, was moderator of the first morning meeting, being followed in the chair at the succeeding three sessions by Dean E. Emerson Leuallen, Leo Roon, and Myron Walker. The modern uses of modern drugs were thoroughly discussed in all their aspects by a group of qualified speakers from every interested branch of science.

It seems especially appropriate that such an occasion should find manufacturers and merchandisers, public-health officers, clinicians, and directors of research discussing their own contributions to the part that pharmacy is playing in the progressive conquest of disease. In these days of compromise and reasonableness drugless healing is no more to be tolerated than is heedless drugging.

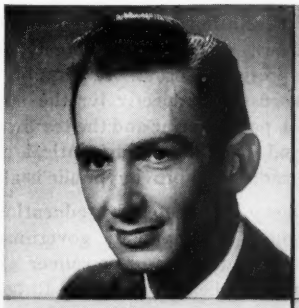
* Editorial in *The New England Journal of Medicine,* Vol. 251, No. 18, October 28, 1954, p. 755.

Just put Benzedrex* Inhaler where your customers can see it.

Everyone who comes into your store is a potential buyer of 'Benzedrex' Inhaler.

Pharmacists, who have displayed 'Benzedrex', have more than doubled their sales!

Put up your display today. Boost *your* sales NOW.



Phoenix, Ariz. "After displaying 'Benzedrex' for only 3 months our sales have increased at least 400%. 'Benzedrex' sales help pay a fair percentage of our overhead."

Lee Statham

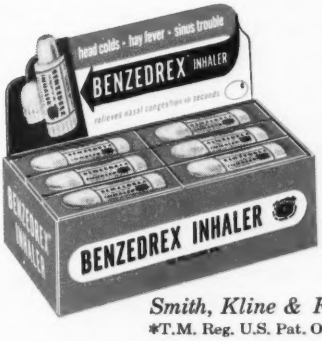
Marietta, Ga. "After moving 'Benzedrex' Inhaler from the back shelves to the prescription counter and displaying it in the new carton, my sales have increased threefold."

Virgil M. Jones

Manchester, N. H. "The 'Benzedrex' Inhaler counter display is the most effective small-space display I have ever had. Since displaying the counter carton, sales of 'Benzedrex' have tripled (even in spring and summer months)."

Prescott C. Chipman

It sells itself!



Sets up in seconds!

Requires only a few inches of counter space! Creates new customers!

Be sure to order in dozens!

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.

News *and* Notes . . .

Colleges

Through a program set up by the Hartford Hospital, the **University of Connecticut** and Pfizer Laboratories, two internships are being offered pharmacy school graduates. Internships include practical experience in hospital policy administration; pharmaceutical manufacturing; prescription compounding and dispensing; and attendance at medical seminars held at the hospital. Appointments are for a 23-month period with salaries paid by the hospital and Pfizer. University fees and expenses are paid by the student.

The **Kansas University School of Pharmacy** Dispensing Laboratory now has its own telephone system for instruction in taking oral prescriptions. The system, a gift of the Kansas Pharmaceutical Association, consists of a master telephone and control panel located in the instructor's office plus telephones at each dispensing desk.

The **Philadelphia College of Pharmacy and Science** recently observed the 134th anniversary of its founding. The College held a Founders' Day Assembly for the student body on February 24, and the Alumni Association held its Founders' Day Reunion Dinner in the College Hall on February 26.

St. John's University of New York has announced the scheduled construction of a Science-Pharmacy Building at the University's new suburban campus in Hillcrest, Queens. The four-level structure will be the second building erected at the site since last year, when work was started on a liberal arts building to open this fall.

Dean Curtis H. Waldon of the **College of Pharmacy, Detroit Institute of Technology** spoke on "What Colleges Are Doing for Law Enforcement in Pharmacy," March 14, at the District Four meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION in Indianapolis. The College's second annual seminar was held on its campus March 24.

Herbert E. Longenecker, dean of the graduate school at the University of Pittsburgh, will become vice president of the **University of Illinois** in charge of the Colleges of Medicine, Dentistry, and Pharmacy, the Graduate College in Chicago, the School of Nursing, Research and Educational Hospitals, Clinics, Institutes, and other health science units at the West Side Medical Center.

A public health forum was sponsored by the Alumni Association of the **Brooklyn College of Pharmacy, Long Island University,** March 1, 8, and 22. The subjects covered included the role of the pharmacist in promoting public health, narcotics control, and the use of radioisotopes in the war against disease. On March 22 the speakers were Basil O'Connor, president of the National Foundation for Infantile Paralysis, and John J. Toohy, executive vice president of E. R. Squibb & Sons, who discussed, respectively, the story behind the Salk polio vaccine and the teamwork being displayed by the pharmaceutical and medical professions in improving public health.

How pharmacy is affected by educational changes, product development, government activity, public relations, and consumer attitudes will highlight the fourth annual **Rutgers** Pharmaceutical Conference to be held at the New Jersey State University in New Brunswick May 11.

Dean Edward C. Reif of the **University of Pittsburgh College of Pharmacy** was a recent speaker at the Science Teachers' Section of the Northwestern Pennsylvania Teachers' Conference in Erie. His topic was "High School Preparation for the Health Professions." The Dean is a past president of the American Association of Colleges of Pharmacy and a member of the Association's executive committee.

The newly-elected officers of the Alumni Association of **Fordham University College of Pharmacy** are M. Meissner, president; E. Easton, 1st vice president; A. Solanger, 2nd vice president; W. Diamantis, recording secretary; Miss L. V. Setaro, corresponding secretary; A. J. White, treasurer. Editor of *Alumni News* is Dr. A. J. Sica, and V. Anselmo is assistant editor.

Formal installation of Beta Theta Chapter of Rho Chi Society, honor pharmaceutical fraternity at the **Brooklyn College of Pharmacy of Long Island University,** took place April 5. The occasion was celebrated with a dinner at

the Granada Hotel in Brooklyn, New York. Officers of the Chapter are: President, Robert Modell; Vice President, Samuel L. Friedman; Secretary-Treasurer, Prof. Isidore Greenberg; Historian, Martin B. Goldstein.

Dr. John C. Krantz, Jr., professor of pharmacology at the School of Medicine, University of Maryland, received the Rho Chi Citation, March 2, at the **Philadelphia College of Pharmacy and Science.** After the presentation ceremony, he delivered the third annual Julius W. Sturmer Memorial Lecture. The title was "The Simplicity to Wonder."

Junior and senior students at the **University of Florida College of Pharmacy** visited Parke, Davis & Company and The Upjohn Company in Michigan, March 26 to April 2. Dean and Mrs. P. A. Foote accompanied the group.

On April 20 and 21 the Third Annual Pharmacy Conference was held at the Continuation Center of the **University of Mississippi.** Among the speakers was Newell Stewart, A.PH.A. president.

Ann Taub Saiber of Newark has been elected president of the **Rutgers University College of Pharmacy** Alumni Association for 1955. Other officers elected were: Donald J. Wernik, first vice-president; Otto Kraft, second vice-president; Walter Wuggatzer, secretary; George M. Krause, treasurer; and Charlotte F. Casey, Florence S. Frick, Dr. Louis Malspeis, William Levine, and John C. D'Arienzo, all trustees.

The fourth annual Rutgers Pharmaceutical Conference will be held on the New Brunswick, N.J. campus, May 11.

Manufacturers

The tenth annual **Schering Award** competition for medical students has opened. Its aim is to encourage medical writing and exploration of current research literature. Titles of three subjects on which American and Canadian students are invited to submit papers this year are: "Current Concepts in the Management of Osteoporosis"; "Prevention and Treatment of Blood Transfusion Reactions"; and "Recent Trends in the Clinical Use of Adrenocortical Steroids." Both a $500 first prize and a second of $250 will be awarded for each of the three subjects. Deadline for entry forms specifying the choice of title is July 1. Information and instructions for the award competition are available from the Schering Award Committee, 60 Orange Street, Bloomfield, N.J.

Howard S. Tierney, Jr., has been named president of **The Denver Chemical Manufacturing Co.** . . .Carl F. Eveleigh, executive vice president of **Eli Lilly and Company,** retired March 31 after 42 years with the company. . . . E. W. Zeller has just been named vice president in charge of sales at **A. H. Robins Co., Inc.**

A two-day seminar of key sales and advertising personnel of **Ames Company, Inc.,** and the scientific staff of Ernst Bischoff Company, Inc., was held in Ivoryton, Conn., on March 10 and 11 to acquaint Ames personnel more fully with the newly acquired Bischoff products.

The 1955 Howard G. Ford Award for sales management excellence was given March 22 to **Smith, Kline & French Laboratories.** It is conferred each year on "that company in the U.S. which, during the year, has made the most outstanding contribution to improvement in distribution, with particular emphasis on outstanding achievement in sales management."

Alfred E. Driscoll, president of **Warner-Lambert Pharmaceutical Company,** has been named chairman of the Drug Division for New York City's April 1955 Cancer Crusade. Warner-Hudnut, Inc., and The Lambert Company merged March 31 to form the Warner-Lambert Pharmaceutical Company.

Appointment has been announced of L. C. Duncan as general manager of American Cyanamid Company's **Lederle Laboratories** and of V. E. Atkins as general manager of the Organic Chemicals Division. . . .Henry W. Gadsen has been elected administrative vice president of **Merck & Co., Inc.** . . .**Mallinckrodt Chemical Works,** has announced the appointment of Francis J. Carr as vice president and Harold A. Brinner as controller. . . .Dr. Robert F. Raffauf has become literature scientist in the Physical Sciences Section at **Smith, Kline & French Laboratories.** . . .Dr. Harold A. Nash has been named director of chemical research by **Pitman-Moore Company.** . . .Appointment of Dr. James B. Lesh as director of Research has been announced by **The Armour Laboratories.**

Edmund R. Beckwith, Jr., general sales manager, and E. Roth James, director of production, both of **Warner-Chilcott Laboratories,** have been appointed vice-presidents of the company. . . .**S. B. Penick & Company** has

2 GREAT PROFIT DEALS

Rhulicream*

For relief of pain and itching from poison ivy, poison oak, insect bites and other minor skin irritations.

Analgesic-Anesthetic Cream

DEAL 1		DEAL 2
22 TUBES $9.90		60 TUBES $27.00
2 TUBES . . . . . NO CHARGE		12 TUBES . . . . . NO CHARGE
$9.90	YOUR COST	$27.00
$18.00 (24 TUBES @ 75¢)	RETAIL VALUE	$54.00 (72 TUBES @ 75¢)
$8.10	YOUR PROFIT	$27.00
45%	PER CENT PROFIT	50%

If you're one of the dealers who sold out at the height of the season last year, take advantage of these special high-profit deals to stock up right now. Rhulicream comes in 12-tube display cartons. It takes a minimum of counter space, literally sells itself.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

Lederle

*Reg. U.S. Pat. Off.

News *and* Notes . . .

announced the establishment of a graduate fellowship in the field of organic chemistry in the Department of Chemistry of the University of Wisconsin.

Lakeside Laboratories, Inc., has reached its thirtieth anniversary. The company was founded in 1924. In its early years it was a small regional house. Its history of expansion actually began in 1932 when President Evan P. Helfaer assumed control and management. In that year, the depth of the depression, the company's volume was $12,000. Now it is well over 450 times as much.

Gerard B. Meynell has been named advertising manager of **American Cyanamid Company's** Organic Chemicals Division and Pigments Division. He replaces Ernest K. Hunt who was recently named public relations manager for the company.

Norman L. Heminway, M.D., has been appointed medical director of **Ames Company, Inc. . . .Chas. Pfizer & Co.** has appointed Dr. I. A. Solomons assistant director of Chemical Research and Development and Dr. C. I. Jarowski, manager of the Pharmaceutical Research and Development department. . . . **Hoffmann-La Roche, Inc.** has announced the appointment of Sidney E. Harris as director of pharmaceutical production.

Francis W. McClelland has been promoted to be head of **Eli Lilly and Company's** research services department. . . .The appointment of Rudolph J. L. Frundt as plant manager for its Yonkers, N.Y., plant has been announced by **U. S. Vitamin Corporation. . . .**William E. LeBar has been promoted to the position of assistant general sales manager of **Winthrop-Stearns Inc.**

The Philadelphia Drug Exchange has named Walter P. Miller president for the second consecutive year. He has been president of Walter P. Miller Company, Inc., Philadelphia paperbox manufacturer, since 1935, and is also president of the Chamber of Commerce of Greater Philadelphia.

Louis R. Rofrano, metro. New York district manager for Schenley Laboratories, Inc., since 1946, has been named assistant sales manager of the company. . . .**Sharp & Dohme** has announced the following appointments: Frank Walton has been named field operations director; Eugene L. Kuryloski, marketing director; and John A. Wells, advertising director. . . . William H. DeCou has been appointed sales manager of **Upjohn's** Chemical Sales Department.

Dr. William A. Bittenbender, associate director of the Merck Chemical Control Division, has assumed duties as technical assistant to the vice president and general manager of the **Sharp & Dohme Division of Merck & Co.**

Bristol Laboratories Inc. has announced that Paul T. Rees has been named director of trade relations, a newly created department. Charles T. Harrell took over Rees' former duties as sales manager. . . .Norman L. Perrin has been appointed office manager at **Lakeside Laboratories, Inc. . . .**Stanley W. Ensminger has been named European manager of production for the Pfizer Corporation, overseas affiliate of **Chas. Pfizer & Co., Inc.**

The **Nepera Chemical Company** has named Dr. Daniel M. Green director of research.

Associations

The **Monmouth-Ocean Pharmaceutical Society of New Jersey** recently instituted a public relations program on medication costs through its publicity chairman, F. Joseph Veneri. A window display and descriptive brochure distributed by Lederle served as the inspiration. The theme of the display, "Your Prescriptions Really Cost So Little Because. . ." was used in a mass coordinated plan throughout all member pharmacies.

A day was set aside to open the educational drive known as "P-R" Day and all stores simultaneously displayed the placards issued them and the brochure message at eye level on their windows. A radio broadcast presented Newell Stewart, president of the A.PH.A., who introduced the program.

The **Galen Pharmaceutical Association** has announced the inauguration of a $300 scholarship fund for pharmacy students at the University of Buffalo commencing with the 1956 school year. . . .Dr. William F. Neuman, associate professor of pharmacology at the University of Rochester and an authority on bone chemistry, received the $1,000 Eli Lilly and Company Award in Biological Chemistry on April 2 at the 127th national meeting of the **American Chemical Society. . . .**

The **American Heart Association** has announced that 114 fellowship awards totaling $695,000 have been made to research workers in the field of heart and blood vessel diseases for studies to be conducted during the twelve months beginning July 1, 1955.

Nelson M. Gampfer, president of The William S. Merrell Co., will represent his company on the board of the **National Pharmaceutical Council.** Edmund R. Beckwith, Jr., vice-president in charge of sales of Warner-Chilcott Laboratories, also joined the NPC board, and G. Fred Roll, manager of public relations, Smith, Kline & French Laboratories, has been appointed vice chairman of the public relations committee of the Council.

Dave Stiles, director of market development for Abbott Laboratories, was the featured speaker at the February 21st meeting of the **American College of Pharmacists at Los Angeles.**

The Virginia Pharmaceutical Association's second annual animal health seminar was held at Roanoke, March 16–17. Its purpose was to enlist the cooperation of the pharmacists of the State in combating the annual losses in the livestock industry in Virginia.

The annual installation party of the **San Diego County Pharmaceutical Association** was held January 29 in the El Cortez Hotel in San Diego. The following officers were installed: President, Richard Sunkel; First Vice President, Ernest Peterson; Second Vice President, Clarence Dettloff; Secretary, Thelma Hollingsworth; Treasurer, Fred Beard.

The 40th anniversary convention of the **Catholic Hospital Association** of the United States and Canada will be held in St. Louis, Mo., at Kiel Auditorium, May 16 to 19, 1955. The convention theme will be "The Road Ahead."

Dr. Anton J. Carlson, University of Chicago physiologist, was unanimously elected Honorary President for Life of the **National Society for Medical Research** at the Society's annual meeting of February 6 in the Palmer House, Chicago.

Mental health week, sponsored by the **National Association for Mental Health,** coincides with the dates of the 102nd annual convention of the A.PH.A.—May 1–7.... The 43rd annual meeting of the **Chamber of Commerce of the United States** will be held May 1–4, 1955, in Washington, D.C.

The name of the Northern Ohio Druggists' Association has been changed to the **"Cleveland Academy of Pharmacy."**

Research findings in radiation disease, virology, and rheumatic fever are among the topics to be reported on at the 55th annual meeting of the **Society of American Bacteriologists** in New York City, May 8–12. Three thousand scientists from university, government and industrial laboratories are expected to attend the sessions at the Hotel Statler and over 400 scientific papers will be presented.

George A. Surabian, Medford, Mass., has been appointed a member of the **Massachusetts Board of Pharmacy....** Frank A. Emma of Utica, a member of the Executive Committee of the **New York State Pharmaceutical Association** and a past president of that organization, has been appointed deputy secretary of state of New York State.... Dr. Randolph T. Major, scientific vice president of Merck & Co., Inc., has been elected a director-at-large of the **American Chemical Society.**

We do give—

SERVICE

—when you need it

Ask any druggist who has had a fire—

It proves why we now insure most of the drug stores

Consult Our Agent

NEW Prescription Products

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Practical Pharmacy Edition, Journal of the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Colostat Suspension

Description: Each fluidounce of suspension contains: colloidal kaolin, 6.0 Gm.; calcium carbonate, 0.75 Gm.; and sodium carboxymethylcellulose, 0.6 Gm. in a flavored vehicle.

Indications: In the management and treatment of diarrhea and other inflammatory conditions of the bowel.

Administration: One to two tablespoonfuls after each bowel movement until symptoms are controlled.

Form Supplied: One-pint bottles.

Source: Schenley Laboratories, Inc., New York, N.Y.

Corticloron Nasal Spray

Description: Solution containing cortisone acetate, 0.5%; chlorprophenpyridamine gluconate, 0.3%; and benzalkonium chloride, 0.025%.

Indications: For the relief of nasal symptoms associated with hay fever, or for other allergic conditions of the nose.

Administration: Spray one or two times in each nostril at three- or four-hour intervals.

Form Supplied: 15-cc. plastic bottles.

Source. Schering Corporation, Bloomfield, N.J.

Meticorten Tablets

Description: Each half-scored tablet contains 5 mg. of metacortandracin, $\Delta^{1,4}$-pregnadiene-17-α,21-diol-3,11,20-trione, a cortisone-like steroid.

Indications: Recommended for palliative treatment of rheumatoid arthritis because of its anti-inflammatory action.

Administration: Initially, 20 to 30 mg. a day, gradually reduced by 2.5 to 5 mg. until maintenance dosage of 5 to 20 mg. daily is reached usually by the fourteenth day. The total 24-hour dose should be divided into 4 parts, administered after meals and at bedtime. Patients may be transferred directly from hydrocortisone or cortisone to metacortandracin without difficulty.

Form Supplied: Bottles of 30 tablets.

Source: Schering Corporation, Bloomfield, N.J.

Mio-Pressin Capsules

Description: Each capsule (No. 1, half strength) contains: *Rauwolfia serpentina* root, 12.5 mg.; protoveratrine, 0.1 mg.; and Dibenzyline (phenoxybenzamine HCl), 2.5 mg. The No. 2 capsule contains twice the amount of each ingredient.

Indications: In treatment of mild, moderate and severe hypertension.

Administration: Mild and moderate hypertension—initially one No. 1 capsule three or four times daily. Severe hypertension—initially one No. 2 capsule as above. Dosage must be individualized.

Form Supplied: Both sizes in bottles of 100 capsules.

Source: Smith, Kline & French Laboratories, Philadelphia, Pa.

Monodral Bromide with Mebaral

Description: Tablets containing in each: Monodral (penthienate) bromide, 5 mg.; and Mebaral (mephobarbital), 32 mg.

Indications: Gastro-intestinal anticholinergic, sedative antispasmodic in the management of peptic ulcer.

Administration: As directed by physician.

Form Supplied: Bottles of 100 tablets.

Source: Winthrop-Stearns Inc., New York, N.Y.

NEW *Prescription Products*

Mysteclin Capsules

Description: Each capsule contains: tetracycline HCl, 250 mg.; and nystatin, 250,000 units.

Indications: Provides broad-spectrum antibacterial activity and antifungal protection.

Administration: Minimum adult dosage is four capsules daily.

Form Supplied: Bottles of 12 and 100 capsules.

Sources: E. R. Squibb & Sons, New York, N. Y.

Panmycin Drops

Description: Each cc. of fruit flavored oil suspension contains 100 mg. of tetracycline.

Indications: Treatment of diseases caused by gram positive and negative organisms.

Administration: Children under 20 pounds body weight, 12 to 15 drops (4 mg. per drop) into mouth or mixed with formula or juice four times daily.

Form Supplied: Bottles of 10 cc. with dropper.

Source: The Upjohn Company, Kalamazoo, Mich.

Panmycin Readimixed

Description: Each 5 cc. of orange colored, fruit flavored, oral oil suspension contains 125 mg. of tetracycline.

Indications: Treatment of diseases caused by gram positive and negative organisms.

Administration: Children, one-half teaspoonful per 20 to 50 lbs. of body weight; adults, one to two teaspoonfuls four times daily.

Form Supplied: Bottles of 2 ozs.

Source: The Upjohn Company, Kalamazoo, Mich.

Piperat Tartrate Tablets

Description: Each double-scored tablet contains 250 mg. of Piperat tartrate (equivalent to 205 mg. of piperazine hexahydrate).

Indications: Treatment of roundworm and pinworm infestation in children and adults.

Administration: 1 to 9 tablets daily depending on weight. No enemas, purges, or fasting required.

Form Supplied: Bottles of 200 and 1,000 tablets. (The solution form is now marketed as Piperat solution.)

Source: Lincoln Laboratories, Inc., Decatur, Ill.

Polycycline Aqueous 250

Description: Each 5 cc. of cherry flavored suspension contains 250 mg. of tetracycline HCl as the calcium derivative.

Indications: Treatment of diseases sensitive to tetracycline.

Administration: Orally as prescribed.

Form Supplied: Bottles containing 1 oz.

Source: Bristol Laboratories, Syracuse, N.Y.

QuerSerpin Tablets

Description: Each tablet contains: resperpine, 0.25 mg.; quercetin, 10 mg.; ascorbic acid, 50 mg.

Indications: For hypertensive patients with demonstrable abnormalities of capillary integrity.

Administration: Initially, one tablet three or four times daily. After two or three weeks, one-half to two tablets daily for maintenance dosage.

Form Supplied: Bottles of 100.

Source: Charles C. Haskell & Co., Inc., Richmond, Va.

Somnafac Tablets

Description: Each tablet contains: bromoisovaleryl urea, 300 mg.; mephenesin, 300 mg.; and scopolamine aminoxide hydrobromide, 0.25 mg.

Indications: In the treatment of simple insomnia.

Administration: One to three tablets at bedtime.

Form Supplied: Bottles of 100 and 1,000.

Source: E. S. Miller Laboratories, Inc., Los Angeles, Calif.

Scopamal Tablets

Description: Each flavored tablet contains: scopolamine methylbromide, 1.5 mg.; phenobarbital, 8 mg.; calcium carbonate, 200 mg.; magnesium trisilicate, 200 mg.; and magnesium oxide, 200 mg.

Indications: In the treatment of gastric and duodenal ulcers, gastrointestinal spasm, and conditions induced by hyperacidity.

Administration: One to three tablets with meals, taken directly or dispersed in water. Caution: May cause dryness of the mouth and

blurred vision in persons hypersensitive to anticholinergics; the dose should be reduced or the drug withdrawn. Use with caution in the presence of heart disease.

Form Supplied: Bottles of 100 and 1,000.

Source: E. S. Miller Laboratories, Inc., Los Angeles, Calif.

Selsun Sulfide Jelly

Description: Jelly containing 0.5% selenium sulfide.

Indications: To relieve discomfort from and control seborrhea of glabrous areas.

Administration: Cleanse the affected area, apply the jelly with light rubbing and remove the jelly with cloth or tissue after 30 minutes. Repeat once or twice daily. Caution: Do not permit Selsun jelly to enter conjunctival sac.

Form Supplied: Tubes: 1/4-oz.

Source: Abbott Laboratories, North Chicago, Ill.

Senilex Tablets

Description: Each tablet contains: pentylenetetrazol, 100 mg.; and nicotinic acid, 50 mg.

Indications: For geriatric patients showing signs of mental deterioration.

Administration: Two tablets three times daily; then lower maintenance dosage.

Form Supplied: Bottles of 96 tablets.

Source: S. F. Durst & Company, Inc., Philadelphia, Pa.

Serpine Tablets

Description: Each scored tablet contains 0.3 mg. of reserpine.

Indications: For symptomatic treatment of emotional states.

Administration: As directed by physician.

Form Supplied: Bottles of 100 and 500.

Source: Pitman-Moore Company, Indianapolis, Ind.

Steclin Suspension

Description: A suspension containing in each cc. the equivalent of 50 mg. of tetracycline.

Indications: Similar to chlortetracycline and oxytetracycline.

Administration: Adult—minimum dose is 250 mg. four times daily by mouth. Children—daily dose is 20 mg. per Kg. of body weight, modified according to type and severity of infection.

Form Supplied: 1-oz. bottles, with calibrated 1-cc. dropper.

Source: E. R. Squibb & Sons, New York, N.Y.

Terramycin-SF Capsules

Description: Each brown capsule contains: oxytetracycline, 250 mg.; thiamine mononitrate, 2.5 mg.; riboflavin, 2.5 mg.; ascorbic acid, 75 mg.; niacinamide, 25 mg.; pyridoxine HCl, 0.5 mg.; calcium pantothenate, 5 mg.; vitamin B_{12} activity, 1 mcg.; folic acid, 0.375 mg.; and menadione, 0.5 mg.

Indications: For stress during infection and for infectious diseases caused by susceptible organisms.

Administration: Orally as directed.

Form Supplied: Round amber bottles of 16 and 100 capsules.

Source: Pfizer Laboratories, Brooklyn, N.Y.

Tetracyn-SF Capsules

Description: Each brown capsule contains: tetracyline, 250 mg.; thiamine mononitrate, 2.5 mg.; riboflavin 2.5 mg.; ascorbic acid, 75 mg.; niacinamide, 25 mg.; pyridoxine HCl, 0.5 mg.; calcium pantothenate, 5 mg.; vitamin B_{12} activity, 1 mcg.; folic acid, 0.375 mg.; and menadione, 0.5 mg.

Indications: For stress during infection and for infectious diseases caused by susceptible organisms.

Administration: Orally as directed.

Form Supplied: Round amber bottles of 16 and 100 capsules.

Source: Pfizer Laboratories, Brooklyn, N.Y.

Thorazine Hydrochloride Syrup

Description: Each 5-cc. teaspoonful of colorless, citrus-flavored syrup contains 10 mg. of chlorpromazine HCl.

Indications: Especially for pediatric use to control nausea and vomiting, induce sedation, and to potentiate analgesic effect of narcotics.

Administration: On the basis of 0.25 mg. of chlorpromazine HCl per lb. of body weight, every four to six hours until symptoms are controlled. Fifteen drops of the syrup are equivalent to 1 mg. of the drug. Children—10 to 60 mg. daily; Adults—20 to 150 mg. daily.

Form Supplied: In 4-fl. oz. coated, opaque bottles to protect the light-sensitive syrup. Dispense in original container only.

Source: Smith, Kline & French Laboratories, Philadelphia, Pa.

Toclase Syrup and Toclase Expectorant Compound

Description: Each teaspoonful of red, cherry flavored Toclase syrup contains: carbetapentane

NEW *Prescription Products*

citrate, 7.25 mg.; menthol, 0.5 mg.; and alcohol, 5%. Each teaspoonful of cherry flavored, honey colored Toclase expectorant compound contains: carbetapentane citrate, 7.25 mg.; terpin hydrate, 16.67 mg.; chloroform, 2.45 mg; menthol, 0.83 mg.; and alcohol, 6.8%.

Indications: Both products are cough center depressants indicated whenever cough control is required. Toclase expectorant compound is recommended for the unproductive cough.

Administration: Both dosage forms are administered orally as prescribed.

Form Supplied: Both in pint bottles.

Source: Pfizer Laboratories, Brooklyn, N.Y.

Toclase Tablets

Description: Each sugar coated, strawberry flavored tablet contains 25 mg. of carbetapentane.

Indications: Antitussive agent acting on cough reflex center.

Administration: Orally, as prescribed by physician.

Form Supplied: Round bottles of 25 tablets.

Source: Pfizer Laboratories, Brooklyn, N.Y.

Trisocort Spraypak

Description: A stable, buffered (slightly acid), aqueous solution containing: hydrocortisone alcohol, 0.02%; gramicidin, 0.005%; neomycin (as sulfate), 0.6 mg./cc.; polymyxin B sulfate, 2,000 U/cc.; phenylephrine HCl, 0.125%; hydroxyamphetamine HBr, 0.5%; with thimerosal, 1:100,000.

Indications: In the treatment of upper respiratory tract disorders such as rhinitis and nasopharyngitis.

Administration: Adults—spray three times in each nostril every three hours. Children—spray once or twice in each nostril every three hours. Use with caution in hypertensives.

Form Supplied: One-half-fl.oz. plastic bottles.

Source: Smith, Kline & French Laboratories, Philadelphia, Pa.

Troph-Iron (Liquid)

Description: Each 5 cc. of the cherry-flavored liquid contains: crystalline vitamin B_{12}, 25 mcg.; thiamine HCl (B_1), 10 mg.; and ferric pyrophosphate (soluble), 250 mg.

Indications: To stimulate appetite, promote growth, and correct iron deficiency.

Administration: One teaspoonful (5 cc.) daily.

Form Supplied: Bottles of 4 fluidounces.

Source: Smith, Kline & French Laboratories, Philadelphia, Pa.

Verapene Tablets

Description: Each apple-green, scored tablet contains: reserpine, 0.1 mg.; and protoveratrines A and B, 0.4 mg.

Indications: For treatment of moderate to severe essential hypertension.

Administration: Initially, 3 tablets daily, after meals not less than four hours apart, under physician's supervision. Atropine sulfate, $^1/_{120}$ gr. sublingually or intramuscularly is useful to correct excessive bradycardia (slow heart beat), and ephedrine sulfate, $^3/_8$ gr. (25 mg.) intramuscularly to correct excessive hypotensive response.

Form Supplied: Bottles of 50.

Source: Wampole Laboratories, Philadelphia, Pa.

Other New Products

(Chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy)

Achromycin Pharyngets and Achromycin Troches

Cherry flavored Achromycin Pharyngets and peppermint flavored Achromycin troches for the control of superficial infections of the mouth and throat are now being marketed by *Lederle Laboratories*. Each Pharynget and troche contains 15 mg. of tetracycline HCl and is designed to dissolve slowly in the mouth. Both may be prescribed in conjunction with systemic tetracycline therapy in severe oral infections. Achromycin troches are packaged in bottles of 25 and 250; Achromycin Pharyngets are individually wrapped in cellophane and foil covered in boxes of 10.

Combistrep Solution (Vet.)

A solution containing in each cc. the equivalent of streptomycin base, 25 mg.; and dihydrostreptomycin, 25 mg., in an aqueous sodium citrate buffer, is now available in 500-cc. multi-dose vials from *Chas. Pfizer & Co., Inc.* Administered subcutaneously or intramuscularly into the thigh or breast of poultry, Combistrep solution is effective against microorganisms responsible for chronic respiratory disease.

Dorbane Suspension—New Dosage Form

The peristaltic stimulant Dorbane is now marketed by *Schenley Laboratories* also as an orange flavored suspension containing in each 5 cc., 37.5 mg. of 1,8-dihydroxyanthraquinone. The dosage is 1 to 2 teaspoonfuls for adults, and 1 teaspoonful for children. Dorbane suspension is available in 1-pt. bottles.

Ion-o-trate Additive (Electrolyte) Solutions

Concentrated solutions of electrolytes containing the label-stated milliequivalents of the important ions in the indicated container sizes are marketed by *Abbott Laboratories* under the name Ion-o-trate solutions: ammonium chloride 100 mEq. in 20-cc., potassium chloride 20 or 40 mEq. in 20-cc., potassium phosphate 40 mEq. in 20-cc., sodium chloride 50 mEq. in 20-cc. and 100 mEq. in 40-cc., sodium lactate 50 mEq. in 20-cc. and 100 mEq. in 40-cc., and dextrose (50%) 0 mEq. in 40-cc. containers. Ion-o-trates are used for individual infusion medication in electrolyte therapy only after dilution.

Kaprylex Capsules

Capsules containing 250 mg. of resin caprylate, indicated in the prophylaxis (2 capsules 4 times daily) and treatment (4 capsules 4 times daily) of intestinal candidiasis (moniliasis) are marketed by *R. J. Strasenburgh Co.* Kaprylex capsules are supplied in bottles of 100.

Lactinex Granules—New Dosage Form

Lactinex Granules, offered by *Hynson, Westcott & Dunning, Inc.*, as a more convenient dosage form of Lactinex Tablets for pediatric and geriatric patients, contain in each 1-Gm. packet a standardized viable mixed culture of *Lactobacilli acidophilus* and *bulgaricus*. For diarrhea, including that resulting from antibiotic therapy, add contents of packet to cereal, food, or milk before feeding. Available in boxes of twelve, 1-Gm. packets which should be kept in a refrigerator.

Lactofort Powder

Lactofort, a nutrient mixture used to fortify milk formula or whole milk for infants and young children, has been marketed by *White Laboratories*. Lactofort provides lysine to increase the nutritional value of milk protein and contains, in each 2.3 Gm.: *l*-lysine (as *l*-lysine monohydrochloride), 500 mg.; vitamin A, 3,750 U.S.P. units; vitamin D, 1,000 U.S.P. units; thiamine mononitrate, 0.75 mg.; riboflavin, 1.25 mg.; pyridoxine HCl, 0.75 mg.; niacinamide, 7.5 mg.; calcium pantothenate, 7.5 mg.; vitamin B_{12}, 2.5 mcg.; folic acid, 0.25 mg.; ascorbic acid (as sodium ascorbate), 75 mg.; iron ammonium citrate green (iron 7.5 mg.), 50 mg.; and calcium gluconate (calcium 130 mg.), 1.45 Gm. Lactofort is supplied in bottles containing 46 Gm. or 40 measures with a special measuring spoon.

Leptospira Canicola Icterohemorrhagiae Bacterin (Vet.)

A vaccine for the prevention of leptospirosis, Leptospira Canicola Icterohemorrhagiae Bacterin, is a suspension of organisms, *L. canicola* and *L. icterohemorrhagiae*, killed by vacuum drying. Two injections of the bacterin, two to four weeks apart, give immunity to the dog. The injections should be repeated annually. The vaccine is manufactured by *Lederle Laboratories*.

Liquid Bardase

The new dosage form of their product for the treatment of visceral and smooth muscle spasm, Liquid Bardase, containing in each 4 cc.: phenobarbital, 1/4 gr.; Taka-Diastase, 2 1/2 gr.; hyoscyamine sulfate, 0.1 mg.; hyoscine HBr, 0.007 mg.; and atropine sulfate, 0.02 mg., has been announced by *Parke, Davis & Company*. One or two teaspoonfuls three times daily is the recommended dosage.

Luminal Ovoids—Replace Oral Tablets

Winthrop-Stearns Inc. has introduced Luminal "Ovoids" to replace the oral tablet form of phenobarbital. Luminal Ovoids are offered as sugar coated, oval-shaped tablets with distinctive colors: yellow, 1/4 gr.; light green, 1/2 gr.; and dark green, 1 1/2 gr. Each is supplied in bottles of 100 and 1,000. *Winthrop* will continue to supply Luminal Elixir, Luminal Powder, and, in sodium form, hypodermic tablets, powder, and injectable solutions in ampuls and vials.

Mebaroin to Mebroin

Winthrop-Stearns Inc. has changed the name of its peach colored tablet containing Mebaral (mephobarbital) and diphenylhydantoin from Mebaroin to Mebroin.

Methotrexate Tablets

Methotrexate (4-amino-N^{10}-methyl pteroylglutamic acid) a folic acid antagonist indicated in the treatment of leukemia in children, has been placed on the market by *Lederle Laboratories* Methotrexate has shown fewer undesirable side effects than other folic acid antagonists such as aminopterin. Methotrexate is available in bottles of 100, 2.5-mg. tablets.

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